CUSTOMER EXPERIENCE IN ONLINE HIGHER EDUCATION:

A STUDY OF ADULT ONLINE COLLEGE HONOR STUDENTS

by

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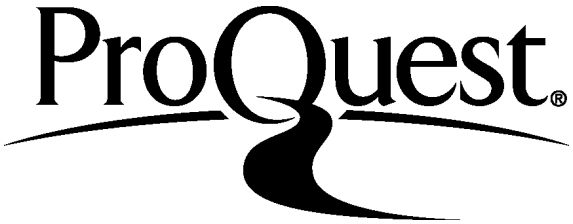

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ABSTRACT

CUSTOMER EXPERIENCE IN ONLINE HIGHER EDUCATION-
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The researcher explored the lived experience of adult online college honor students (AOCHS) with the goal of describing critical factors that support academic success. The study addressed a gap in the literature concerning how the technology and virtual context of adult online college education are perceived, interpreted, and employed by the most successful students in undergraduate online college degree programs. Participants described how they perceived their online learning experience, what meaning they attribute to this experience, and what strategies they employ to achieve academic success in the online learning environment. The study was based on Deming's total quality management philosophy, Nonaka's theoretical context for knowledge generation, and the community of inquiry (CoI), a conceptual framework for online education. An online questionnaire and individual telephone interviews were used to gather qualitative data, which were analyzed using thematic coding and analytic induction to address the study's purpose and answer the research questions. Follow-up interview subjects were purposefully selected to provide a heterogeneous sample based on self-reported demographics, priorities, and motivations. Results showed that honor students' expect that the technologies and user interfaces in online college classes should be as engaging and effective as social media, online entertainment, and Internet commerce technologies that they use in their nonacademic lives. That online instructors should be active and encouraging participants in the learning process. And that students' personal, academic success is supported

by a mature self-image and work ethic, effective time management and workload planning, clear and timely communication with faculty members, positive collaboration with classmates, and fluent use of learning technology.

For Mrs. Bess C. Baskerville

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION AND STATEMENT OF THE PROBLEM

According to Rourke and Kanuka (2009), the central indicator of a successful online learning experience, deep and meaningful learning, is "the critical examination of new facts and the effort to make numerous connections with existing knowledge structures," contrasted with surface learning, which is simply "the uncritical acceptance of new facts and ideas" (p. 24). Adult online college education presents unique opportunities to exploit new technical capabilities to enable deep and meaningful learning, and to enhance the learning experience and success of online students. Through an in-depth exploration of the experiences of a sample of adult online college honor students (AOCHS), the researcher identified opportunities to facilitate adult online college student learning.

Deep and meaningful learning is a fundamental goal and essential outcome of successful participation in adult online college education. It incorporates multiple dimensions, including effectiveness of instruction, active learner engagement and empowerment, inquiry-based collaboration, and cognitive engagement that is "accountable to the subject at its core" (Palmer, 2010, p. 120). More than the simple accumulation of information, deep and meaningful learning requires interpretation, assessment of relevance, and critical judgment. In adult higher education, it evokes a wide range of affective states, including enjoyment, satisfaction, frustration, loneliness, longing, and eventually, pride of achievement. Experiences of deep and meaningful learning also equip students to give up dualistic, "right/wrong" thinking in favor of multiple perspectives and eventually develop the maturity necessary to embrace multiple perspectives in a relativistic world.

Just as in traditional classrooms, learning in the online college education environment combines the individual student's accumulation of topic-related information with the social processes of knowledge generation and the cognitive processes of critical thinking. Assessment of online adult college student performance is based on both task performance and participation. Task performance—demonstrating the ability to recall information, follow instructions, and meet deadlines—has historically been the foundation of assessment in academic work. In this traditional model, the instructor, a person knowledgeable in the field of study, distributes information to the students, who record and memorize it. Later, the students demonstrate their retention of the facts by passing tests or producing essays related to the class topic. Traditional pedagogy employs this model of instruction. According to Garrison, Anderson, and Archer (2000), student participation in a community of inquiry is an even more valuable process for cognitive development than task completion because the student's participation supports his or her future success in the workplace, where collaboration skills are highly valued. New digital/information technologies applied to online learning can facilitate deep and meaningful learning, which in turn can lead to an engaged and satisfying learning experience and ultimately to greater success in the modern work setting.

Background of the Study

Drucker (1989) observed that the 20th century, which he called the "age of discontinuity," marked a turning point in the development of human culture and economics. At that time, he observed, knowledge, and the workers who own and create it, became the most valuable and productive asset on earth. Today, vast numbers of adult students are choosing to enroll in online college classes as a whole generation of middle-class society members finds that a college degree is a necessary credential for obtaining a rewarding career as a knowledge

worker in today's information-based society. In the late 20th century, Drucker predicted that the widespread use of computer technology would force a fundamental shift in education because the computer is a learning technology rather than a teaching technology.

> The computer has unlimited patience. No matter how many mistakes the user makes, the computer will be ready for another try. It is at the command of the learner in a way no teacher can be . . . . unlike the printed book, it admits of infinite variation. The computer is playful. (Drucker, 1989, p. 240)

The evolving use of computer technology has also created the need for new strategies to organize and convert large amounts of information into knowledge. An important concept of knowledge management (KM) theory is Nonaka and Takeuchi's (1995) description of "tacit" knowledge and how to discover, cultivate, and convert it into organizational knowledge (p. 8). In KM, knowledge is most commonly categorized as either explicit (documented) or tacit (residing in people's heads). Nonaka and Toyama (2003) employed the Japanese concept "把, *Ba*, a holder or a container" to describe a shared space for knowledge generation through various stages of conversion. This space can be physical (an office, a classroom), virtual (email, a teleconference, an online class), in the mind (shared values or thoughts) or any combination of these. *Ba* provides a platform for advancing individual and/or collective knowledge. Nonaka and Toyama described four types of *Ba*' corresponding to the four stages of "knowledge conversion"- socialization, externalization, combination, internalization (SECI). These *Ba* provide platforms for specific steps in a continually expanding knowledge-generating spiral (Nonaka, 1994).

The result of these transformations of knowledge through the knowledge spiral is that new knowledge is being continuously created, thus supporting the learning process. By transforming tacit knowledge into explicit knowledge, for example, a student can capture the expertise of other individuals, thus expanding the total organizational memory. Nonaka and Takeuchi's (1995) SECI model contains suggested processes for cultivating and facilitating

knowledge generation that are relevant in an online community of inquiry. Nonaka and Toyama's (2003) SECI model of knowledge generation is also useful for describing online the college learning context. Information transfer channels between teacher and learners, and between the course content and the learners, control the pace, format, and flow of the information upon which the knowledge generation process subsists. Information transfer and conversion are the enabling processes for the development of knowledge.

Increasing the bandwidth or throughput of information transfer interfaces results in faster and broader development of knowledge. In a single generation, the technology used to support distance education has evolved from paper, envelopes, and postage stamps in "correspondence schools" to gigabit interactive audio video instruction and collaboration infrastructure. In an essay proposing methods for educating a digitally simulated human being, Kurzweil (2013) pointed out the continuing trend of exponential advancement in digital processing systems, nano-scaled mechanical devices, and genetic engineering techniques. Now, in the 21st century, these technologies are being incorporated, both physically and culturally, into the human species. New digital technologies augment the human body's capability, to store, recall, and process knowledge. Digital extensions of biological brains are available to online college students through high-speed digital information transfer channels. The potential benefits and consequences of evolving technologies in online education are at the heart of this study.

Statement of Problem

There is a gap in the literature concerning how the technology and virtual context of adult online college education are perceived, interpreted, and employed by the most successful students in undergraduate online college degree programs. Important knowledge is not yet available concerning deep and meaningful learning experiences in online education. There is a

need to understand how emerging digital technologies can be applied to online higher education environments to create deep and meaningful learning experiences for students.

In the past, information was a scarce resource, and education was a system for imparting information held by knowledgeable instructors to unapprised learners. Now, with the proliferation of global telecommunications, Internet commerce, social media, and powerful indexing and searching technologies, information has become media-rich, abundant, and easily accessible. However, these vast sources of information are not a trustworthy foundation for an educational system. Context and meaning are the scarce commodities today. The new purposes of education are to help learners communicate with others, to find relevant and trustworthy information, and to be equal participants with teachers in diverse learning settings

According to McCombs (2000), real-life learning is most often self-directed, playful, engaging, recursive, and nonlinear. Real-life learning is meaningful from the learner's perspective. Motivation and learning in an online class should look like the natural processes they are in real life. In too many online learning experiences, the learning process is rote, surface, and joyless. Many students are complying with mandated learning demands to master prescribed standards and benchmarks; “they are going through the motions but becoming increasingly alienated and frustrated in the process” (p. 4). “Students must be seen as knowledge generators and active participants in their own learning. When power is shared by students and teachers, teaching technologies are a means to an end rather than an end in themselves” (p. 2).

McCombs (2000) argued that moving toward this vision will require redefining the learning process and current practices. Learning experiences should prepare students to be not only clever and skillful information users but also mature and conscientious knowledge producers. When the focus of adult online college education is knowledge organization, context

production, and meaning creation, it can be balanced with a concern for the future well-being of students and their learning needs in an increasingly complex and dynamic world. Creating an immediacy and authenticity in the learning experience leads to engagement and the empowerment of the learner.

Mehta and Fine (2012) suggested that answers for improving online learning environments lie less in technology than in a different vision of schooling from that which prevails today. They argued that the logic governing much current educational practice is that the primary goal of schooling is to prepare students for future success. This logic values what students will become in the future more than what they are in the present. Schooling is conceived as a means to an end. Real life begins after graduation. Mehta and Fine propose an alternative vision in which "students are treated as active meaning makers with the capacity to do interesting and valuable work now. To engage with a subject, in this view, is not simply to receive knowledge but also to create it, [simulating] the real world of historians, movie producers, and other creative professionals" (p. 33). Accordingly, the "purpose of school is not so much to prepare students for a hypothetical future as to support them in engaging with the complex challenges that professional work at its best entails" (Mehta & Fine, 2012, p. 31). This approach is rooted in a profound respect for students' capability to direct their own learning activity.

Kuyini (2011) reported that, in a study of students' feelings about participation in online groups, 72% of respondents "responded 'little' or 'none at all' to a statement that online groups gave them a sense of control over their learning" (para. 33). Kuyini also found that the group discussion activities constituted an unwelcome distraction to the way many students wanted to engage with the study topic. The group discussion activities were compulsory and, therefore, part of the nonnegotiable aspects of the course. Students therefore only participated because it was a

requirement. Otherwise, it was something they would rather not do. Teachers must find ways to ensure that students see online group activity as something that enhances their learning.

There is a need to understand how emerging digital technologies can be applied to online higher education environments to create deep and meaningful learning experiences for students. Providing greater access to this type of learning through digitally enhanced online education will help prepare the next generation of knowledge workers who will be expected to collaborate, create knowledge from a growing expanse of information, and continue to learn throughout their careers.

Purpose of Study

The purpose of this study was to explore the experiences of adult online college honor students in order to identify important factors supporting honor students' use of technology in the online learning environment. By exploring the lived experience of adult online college honor students, a rich description of the phenomena associated with their success was developed. The potential benefits from this exploration are the discovery of opportunities to exploit new technical learning capabilities and to enable deep and meaningful online learning for more of the students participating in adult online college environments. The findings of this study will contribute to the body of knowledge available for use in optimizing the effectiveness of adult online college education in preparing students for successful careers in today's information technology-based economy.

Theoretical or Conceptual Support for the Study

Building upon historically effective business sector experience, the researcher compared current adult online college education technology and practices with proven business technology and practices such as total quality management and organizational knowledge generation. As an

outcome of this study, new knowledge has been generated for use in the optimization of the application of technology to the adult online college learning environment. The foundational theories for this project include: Total Quality Management and System of Profound Knowledge (Deming, 1986), 把 "Ba," an enabling context for knowledge generation (Nonaka and Toyama, 2003.), The community of inquiry (CoI), a framework for online educational practice (Garrison, Anderson, & Archer, 2000; Wang, 2010), and cognitive development in higher education students (Perry, 1970; Belenky, Clinchy, Goldberger & Tarule, 1986; West, 2004).

As online curricula push towards standardization, the ability of faculty to modify assignments and course materials is diminishing. However, this has not eliminated the potential of faculty to be active drivers of enhanced quality in the instructional experience and student learning. According to Wang (2010), e-learning practitioners should pay close attention to integrating individual motivation, learning process support, and organizational support to ensure successful completion of e-learning courses, fostering a participative and completion oriented culture. Lesson-planning strategies should drive instructor-student interaction, class collaboration, and critical thinking. The online instructor must become a strategic educator through the purposeful use of instructional strategies, engagement strategies, and both formative and post instructional assessment techniques. The students' ability to interface with and create media draws upon skills from multiple levels of higher learning including analysis, application, and creation. The skill development that takes place at higher orders of thinking facilitates the development of a broader focus on multiliteracies and multimodalities in learning across many integrated disciplines (Kress & Selander, 2012).

Novelty, combined with data presented across a wide spectrum of content areas, elicits interest and engages the learner. A novel experience captures the learner's attention and satisfies

an essential need of the human mind. Human beings continually seek exposure to new experiences and stimuli, and once each is fully understood, they seek yet another unfamiliar data thread or experience to master. Novel experiences are deeply rooted in human development processes. Children move from one novel experience to the next, gaining understanding, then setting each aside, to look for the next new experience. This need for novel yet often recursive and familiar social interaction might be why adult online college students find social media interesting, informative, and enjoyable, and why, conversely, they may find some online college class activities boring or frustrating.

According to Friedman and Friedman (2014), Facebook, Twitter, and other Web-enabled social media make the world a smaller place. Many web applications not previously associated with social media now have a social networking component, for example Google, eBay, YouTube, and HowStuffWorks. "Groups of people, large and small, are better able to interact more regularly, stay in touch, and accomplish various goals, because of these technologies. Social media technologies fostering community are democratic and inclusive" (Friedman & Friedman 2014, p. 5). However, unlike online social media environments, where participation is spontaneous and voluntary, an online class consists of mandatory assignments and external assessment of student performance. Self-assessed task authenticity and self-efficacy values are often low, resulting in student boredom and frustration. Students can also become frustrated by the presence of an expert and dominant class member who impedes the development of shared understanding and effort (Artino & Stephens, 2007). Another common frustrating experience in online classes is associated with a poor work ethic of some members who did not fulfill their obligations. Social loafing creates an imbalance of effort and participation. Difficulty in communication can sometimes prevent groups from clarifying goals, roles, and other group

functions. Frustration is also sometimes generated by the poor quality of communication in group discussions (Capdeferro & Romero, 2012).

Some students are frustrated by open-ended discussion and evidenced-based approaches in an online course. These preferences are explained when framed in the context of human cognitive development (Perry, 1970; Belenky et al., 1986; West, 2004). Higher education requires teachers to nudge students grudgingly forward along paths of cognitive development that lead to the practice of critical thinking and intellectual maturity. Each student's intellectual perspective progresses from dualism (the teacher is the sole authority figure) to multiplicity (many valuable points of view) to committed relativism (oneself as an authority). By understanding these stages in cognitive development, a teacher can simultaneously empathize with the student's frustrations while persistently guiding and encouraging further intellectual growth (West, 2004). With this support, students can choose to abstain from dualistic, "right/wrong" thinking in favor of evaluating multiple perspectives and eventually develop the maturity necessary to embrace multiple perspectives in a relativistic world.

Deep and Meaningful Learning in a Computer Simulated Classroom

Students historically have been taught to think critically and to ask, "Who wrote these words? How are they situated in time and place: politically and socially? What is their message? Why were they written?" (Turkle, 1997, p. 82) "What assumptions does the author make? Does the author provide credible evidence? Is the methodology sound, logical, and unbiased?" (Vinton, 2004, para. 3). Critical thinking skills are equally applicable in the computer-simulated online college education environment as they are in traditional education's "world of books and bricks." Turkle (1997) prescribes a new class of computer skills: critical thinking skills for the culture of computer simulation. Who coded this simulation? What were their motives? How

should I interpret my experience in it? “We make our technologies, our objects, but then the objects of our lives shape us in turn” (p. 82). With their ubiquitous access to personal digital assistants such as smartphones and laptops, adult learners have immediate access to nearly unlimited information about any topic. However, having information is not the same as having knowledge. Knowledge consists not only of accumulated information, but also of interpretation, assessment of relevance and critical judgment. Knowledge is information assessed in, and made congruent with, its relevant context.

Technology in online adult education today can be used to do much more than simply simulate a physical, brick-and-mortar classroom. New technology supported instructional models such as blended learning and massively open online courses (MOOCs) create learning dynamics and environments that are simply not possible in brick-and-mortar settings. Competency-based education such as the University of Wisconsin’s (2014) “flexible option” online degree program eliminates the traditional credit hour teaching model allowing personalized, self-paced, mentored study. Instead of awarding credits based on credit hours, this model awards credits based on proven, mastered *competencies* required in an area of study. Competency-based programs offer very effective learning dynamics without a teacher or even a class of peers. In the past, a major obstacle to the implementation of competency-based online degree programs has been the U.S. Department Education’s refusal to provide student financial support for these noncredit-hour programs. However, in 2013 the acting assistant secretary for postsecondary education published a letter stating support for funding and offered to help institutions applying for eligibility for direct assessment (competency-based) degree programs (Bergeron, 2013). While these innovative, emergent approaches to online learning offer the possibility of significant benefits, the majority of adult online college students today are enrolled in the traditional credit-hour

based, instructor led, small size asynchronous classes still offered by most colleges. The current study was focused on the experience of adult online college students who are able to achieve academic success while participating in this traditional online class model.

Traditional online classes often lack audible, visual, olfactory, and haptic organizing cues needed to synchronize the transfer of information from the teacher to the learner, from other students to the learner, and from the virtual context to the learner. Rather than viewing technology as merely a tool for information delivery, it should be seen as a means to improve learning. Jacobsen, Clifford & Friesen (2002) argued that most online learning activities consist of traditional classroom chalkboard, pencil, and paper actions simulated using a computer. They observe, ‘‘when you begin to think differently about technology and learning. . . . You can design different approaches to learning’’ (p. 27). The basic objective should be to ‘‘develop fluency with teaching and learning with technology, not just with technology, itself’’ (Jacobsen et al., 2002, p. 44). When used to expand and catalyze human learning capabilities, educational technologies have the potential to enhance and amplify their effectiveness.

An Information-Centric Online Community of Inquiry

Palmer (2010) describes an ideal learning community as a community of truth. In a subject-centered classroom, the teacher’s central task is to give the subject itself an independent voice, “a capacity to speak its truth quite apart from the teacher’s voice in terms that students can hear and understand. When the great thing speaks for itself, teachers and students are more likely to come into a genuine learning community, a community that does not collapse into the egos of students or teacher but knows itself accountable to the subject at its core” (Palmer, 2010, p. 120).

The “great thing” in the middle is both the goal and the path toward the goal. The “great thing” in the middle of topic-centered online education is not a collection of facts, or a store of

static knowledge, or some set of skills. It is a dynamic, evolving concentration of shared meaning. The "great thing" at the center is more than knowledge passed from the head of the teacher to the heads of the students. It is also more than knowledge generated and transferred by and to the students.

Concentrations of sentience constantly evolve and replicate wherever information is perceived and integrated with experience (Gleick, 2011). Sentience is an integral condition emerging with volition from information. As digitally enhanced participants in andragogy, the teacher and students can connect and integrate the conceptual realities residing in not only their biological brains but also in their "cloud-based," digital, brain extensions (agents and memories). The memories, memes, biases, values, assumptions, images, sounds, sensations, and sentiments they share and discuss can coalesce into a newly born instantiation of the "great thing" at the center of their class. A very exciting prospect of online educational environments is their potential to move beyond the traditional paradigm of "a teacher and students exchanging information" to allow the consciousness and intelligence inherent in the information to inform the cognitive development of all of the participants.

Research Questions

Large numbers of students are choosing to enroll in college classes because it is commonly believed by middle class society members that a college degree is a necessary credential for obtaining a rewarding career as a knowledge worker in today's information based society. There is evidence that attitudes towards the value of a degree relative to the financial investment are declining. Although a college graduate may potentially make more money, in many industries the earning potential of students who obtain alternate professional credentials and certifications is nearly the same. Online classes offer an attractive opportunity for adults

seeking career advancement to obtain additional valuable credentials from accredited institutions. According to Allen and Seaman (2014), in a survey designed, administered and analyzed by the Babson Survey Research Group, in partnership with the College Board and using responses from more than 2,800 colleges and universities, the following factors were identified as "likely" or "very likely" to affect online college education in the next 5 years: 90% believe the majority of college students will be taking at least one course online, and 67.9% believe there will still be concerns about the relative quality of online courses (Allen & Seaman, 2014, p. 36).

Adult online college education presents unique opportunities to exploit new technical capabilities to enable deep and meaningful learning. However, not enough is currently known about technology's effects on the adult online college education process and its participants. If more extensive knowledge were available regarding the students' experience with the technical and practice- based adult online college education context, then opportunities for improving their learning outcomes might be identified. The following research questions were explored in this study:

1: How do adult online college honor students experience deep and meaningful learning in online classes?

2: How do adult online college honor students achieve critical engagement in their classes?

3: How do adult online college honor students use information technology in their online classes for learning?

4: How do adult online college honor students use information technology outside of their online classes for learning?

5: What improvements in adult online college class technology would adult online college honor students suggest?

Currently available digital telecommuting and computing systems are improving exponentially in their capability to facilitate human learning. New applications of technology for digitally augmented students and teachers can support more effective conversion of information into knowledge and knowledge into intention and beneficial action. The incorporation of more powerful online knowledge management technology into adult online college education has the potential to reduce the time required to obtain a baccalaureate degree. Adult online education might then provide access to higher education for adults who are currently working and continuing to fulfill their day-to-day family responsibilities.

Assumptions

In this study of the experience of adult online college honor students, it was assumed that that learning technology will continue to be important in the future, and newly evolving technologies will continually be adopted in many online higher education environments. In addition, it was assumed that deep and meaningful learning is the same experiential phenomenon whether experienced by the student in an online or traditional classroom context.

In this study, it was also assumed that the voluntary participants responded truthfully and openly to the online questionnaire and interview questions. This exploration of the lived experience of adult online college honor students was based on the assumption that these students' perceptions, motivations, and practices determine their academic performance to a greater extent than any external factors and environmental conditions. It was also assumed that, by a thorough exploration of the lived experiences of a sample of the adult online college honor student population, some common success strategies might be identified.

Scope and Delimitations

The scope of this study was limited to the education of adult college students by means of telecommunication and computer technology. In particular, how information and technology are used by honor students was examined. Excluded from the study were any issues pertaining to online educational technology infrastructure or pedagogical practice for children (K-12), for adults under 24 years of age, or for other than undergraduate online college students.

The cost of tuition, the availability of financial aid, and the problem of rapidly rising levels of student indebtedness were outside the scope of this study. Any analysis of potential cost savings due to improvements in efficiency through new technology was beyond the scope of this study.

Limitations

The researcher collected and analyzed survey data from adult online college honor students by means of telecommunication and computer technology. Access to and use of collected data were limited by institutional rules for the protection of human research subjects, and the extent to which identified subjects voluntarily chose to cooperate in the research. A further limitation is that the total sampling population for this study consisted of adult online college honor students enrolled in one Midwestern U.S. college during the 2014 academic year.

Nature of Study

The goal of this study was to explore the lived experience of honor students in adult online college education classes. The adult online college educational experience was investigated, using phenomenological multiple case study methodology with special focus on honor students' processes of engagement with the technology supporting the generation of

knowledge and cognitive development. Publically available data related to adult online education were also incorporated into the analysis when it was applicable.

The researcher first employed Internet search technology to locate and analyze relevant peer-reviewed journals, industry reports, and institutional literature concerning online college academic success. Randomly selected adult students on the current academic honors list were invited to respond to an online Google forms questionnaire of open-ended questions to provide detailed information concerning the factors that support their success in online classes. In addition to the online questionnaire, a purposeful sample of students were selected for participation in semi-structured telephone interviews exploring in detail their adult online college education experiences. Qualitative analysis of the Google forms online questionnaire responses using thematic coding and analytic induction, and of the interview transcripts employing phenomenological multiple case study methodology, were used to answer the research questions and form the basis for recommendations for practice and future research.

Definition of Terms

Adult online college education (AOCE): distance learning infrastructure and practice consisting of all equipment, supplies, and practices employed in conducting the classes required of students to complete an accredited undergraduate degree.

Adult online college honor student (AOCHS): any student, greater than 24 years of age, who has been officially cited for above average academic achievement while enrolled or recently enrolled in an online course as part of a college level program of study that could lead to the awarding of a baccalaureate degree.

Adult online college instructor: any person engaged in andragogical practice supporting the conducting of adult college classes via telecommunication and technology infrastructure.

Cognitive presence: "The extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication" (Garrison et al., 2000, p. 89). Also student contribution to the online learning experience through a combination of self-efficacy and individual effort (Shea & Bidjerano, 2010). Garrison, Anderson, and Archer (2001) suggested that "measures of cognitive presence are "a means to assess the systematic progression of thinking over time" (p. 11

Community of inquiry (CoI): a framework for online educational practice proposed by Garrison, Anderson, and Archer (2000).

Deep and meaningful learning: the central indicator of a successful online learning experience, defined as "the critical examination of new facts and the effort to make numerous connections with existing knowledge structures," contrasted with surface learning, defined as "the uncritical acceptance of new facts and ideas" (Rourke and Kanuka, 2009, p. 24).

Online college education effectiveness: the extent to which students who enroll will successfully complete online classes and also acquire, and can apply, the literary, numerical, and problem-solving knowledge they generate through their learning experience.

The National Postsecondary Education Cooperative (NCES) and its international partners in the Program for the International Assessment of Adult Competencies (PIAAC) assess three domains of knowledge in post-secondary education:

1. Literacy, defined as "understanding, evaluating, using and engaging with written text to participate in the society, to achieve one's goals and to develop one's knowledge and potential.

2. Numeracy, defined as "the ability to access, use, interpret, and communicate mathematical information and ideas, to engage in and manage mathematical demands of a range of situations in adult life."
3. Problem-solving in technology-rich environments, defined as "using digital technology, communication tools, and networks to acquire and evaluate information, communicate with others, and perform practical tasks." (Erwin, 2012, p. 8)

PIAAC's tests of the effectiveness of post-secondary learning demand a demonstration of knowledge acquisition, while tests of adult literacy demand a demonstration of knowledge application. "Both deliberative knowledge acquisition and knowledge application are critical outcomes of postsecondary education…" (Erwin, 2012, p. 9)

The third domain of learning effectiveness, "problem solving in technology-rich environments," corresponds to the specific class of challenges that people encounter when using information and communication technologies in online college classes. "where the existence of the problem is a consequence of the availability of new technologies, where the solution requires the use of computer-based applications or where the problem relates to the management or use of information technologies" (PIAAC, 2009, para. 1).

Online college education technology: Any combination of hardware and software components that comprise the supporting infrastructure used for learning and study required successfully to complete an online college level course.

Social presence: "the ability of participants in a community of inquiry to project themselves socially and emotionally, as "real" people (i.e., their full personality), through the medium of communication being used." (Garrison et al., 2000, p. 94).

Teacher presence – Timely, encouraging, individualized feedback from an online instructor (Ke, 2010).

Significance of the Study

By identifying the technical strategies and practices used by honor students to achieve deep and meaningful online learning, the researcher hoped to contribute to the body of knowledge available to enhance effectiveness in evolving online education technology application and practice. Results from the study may add to an understanding of how successful learners use technology to process information in online classrooms. This understanding could help educators apply technology more effectively to enhance student learning and to prepare students for successful careers in the knowledge economy. With their ubiquitous access to personal digital assistants such as smartphones, tablets, and laptops, adult learners have immediate access to virtually unlimited information about any topic. Having information is not, however, the same as having knowledge. New applications of technology can potentially assist digitally augmented students and teachers in converting information into knowledge more efficiently.

Summary

Technology may not yet be used optimally to enable deep and meaningful learning in current online adult college education environments. Some aspects of commonly used online higher education technology contribute to loneliness, lack of authenticity, and stress. In real life, learning is most often self-directed, playful, engaging, recursive, and non-linear. Motivation and learning in an online class should emulate the natural learning processes as they exist in real life. In too many adult online learning experiences, the learning process is rote, surface, and joyless. The purpose of this study was to acquire information that might contribute to the body of

knowledge available for use in optimizing the effectiveness of adult online college education. The findings of this research may help to address inefficiencies and shortcomings in the adult online education process by exploring the lived experience of adult online college honor students and uncovering opportunities to exploit new technical capabilities to enable deep and meaningful online learning for a greater portion of the participants.

The method of this study was to apply inductive thematic analysis to online questionnaire responses and then to generate phenomenological insights from in-depth interview data from selected participants. Randomly selected adult students on a current academic honors list were invited to respond to an online Google forms questionnaire of open-ended questions that requested detailed information concerning the factors that support their success in online classes.

Qualitative analysis of the Google forms online questionnaire responses using thematic coding and analytic induction and analysis of interview transcripts employing phenomenological multiple case study methodology were used to answer the research questions and form the basis for recommendations for practice and future research. It was the intention of the researcher that the results of this study might contribute significant information to the body of knowledge needed to identify effective learning strategies and emerging opportunities to exploit new technical capabilities to enhance adult online college student success.

Chapter 2 includes a comprehensive review of the literature related to the study, including both foundational theories and recent research. It reinforces the connection between the research problem and the literature reviewed. In Chapter 3, the general design of the study is identified as a qualitative multiple case study. The reason this approach was selected is stated, and the methodology for its use is described. The strengths and weaknesses of the approach are also described. It is also explained how the research was conducted in a way that protects the

rights of human participants. Chapter 4 presents the results of the data analysis. The research questions are restated and the associated data are presented. Chapter4 also describes in detail the themes developed through qualitative analysis of the research subjects' responses. Chapter 5 includes a reconfirmation of the study's overall purpose and reinforces its intended contributions. The areas of inquiry associated with the research questions are presented with their corresponding assumptions and conclusions in order to provide contextual meaning to the results. Finally, a critical analysis of whether the conclusions are credible given the research methodology, design, and results is provided.

CHAPTER TWO

LITERATURE REVIEW

This chapter includes a review of several areas of applicable theoretical literature and current research related to adult online college education. Currently evolving innovations in the systems and applications being employed in adult online college education may potentially improve the quality of the lived experience of students and enhance their success in achieving desired learning outcomes. In this review, pedagogical practices in adult online education are presented in the historical context of the evolution of the knowledge worker and the global information economy. The CoI framework for online learning is reviewed as a facilitating conceptual model for the development of an information-based, topic-centered, constructivist paradigm for adult online college education. Computer assisted online education is proposed as a disruptive technology that might significantly improve adult online college student's learning experience and enhance the pedagogical practice of adult online education.

The researcher has explored current adult online college education technology and practices in a context of proven business technology and practices. The purpose of this study was to develop knowledge that will be useful for optimizing the application of technology to the adult online college environment. The foundational concepts for this project include TQM philosophy and system of profound knowledge (Deming, 1986), 把 "*Ba*," an enabling context for knowledge generation (Nonaka & Toyama, 2003) and CoI, a framework for online educational practice proposed by Garrison, Anderson & Archer (2000).

In this chapter, a literature search strategy for completing the literature review is presented to help readers to understand the scope, coverage, and thoroughness of the review. Several important theories that form the theoretical or conceptual foundation of the study are

cited, and ways in which these theories might be extended, disproved, or developed are discussed. A critical synthesis of relevant literature, including original theoretical sources, dissertations, and other recent studies is provided, and a description of how the researcher's ideas and models relate to relevant literature and possible gaps in the literature related to the study are identified. A broad, balanced overview of literature related to the proposed research is presented, and, in addition, a critical analysis of themes, trends, and relative applications of research methodology are presented as justification for the researcher's selection the chosen method. A summary of the major points included in Chapter 2 and a transition to Chapter 3 are then provided.

Literature Search Strategy

In order to build a solid theoretical basis for this study, the scope of the researcher's investigation ranged beyond peer-reviewed journals and even beyond recently released publications. Foundational theories were found in books by authors such as Knowles (1980), Kolb (1984), Drucker (1989), Deming (1986 & 1994), Nonaka and Takeuchi (1995), Aarseth (1997). Palmer (2010), and Gleick (2011). In addition, textbooks and articles on foundational theories that were written a substantial number of years ago have been used to support the development of the researcher's contextual understanding and background knowledge of the topic of this study.

This literature review also includes information from recent peer-reviewed journal articles and dissertations. These articles were found by using subscriptions to educational resource databases, Internet search tools such as Google Scholar, and websites maintained by educational institutions, government agencies, and organizations engaged in online learning and distance education. Initial keywords used in the literature search included distance learning, adult

online college education, collaborative learning, constructivism, and online college student experiences. As the specificity of the research topic increased, the literature search terms were progressively modified to increase the depth of focus on the specific phenomena experienced by adult online college honor students in the framework of the CoI model of online education (Garrison, Anderson, & Archer, 2000). The concepts of cognitive presence and critical engagement became central to the researcher's review of current literature.

Theoretical or Conceptual Foundation

In today's adult online college environment, technology plays a central role in determining the quality of the student's learning experience. The faculty and information technology support staff s are the knowledge workers and means of production, and the course content has evolved from proprietary, static, textbooks into a vast, dynamic, and seemingly boundless cloud of online information.

Adult online college Education–An Evolving and Maturing Business Sector

Adult online college education, which began 20 years ago as a disruptive innovation pioneered by for-profit universities and a handful of entrepreneurial private and public, adult-focused institutions, has now become a mainstream delivery platform of higher education. More than 80% of public universities and half of private colleges offer at least one fully online program (Clinefelter, Madga, & Aldridge, 2013). Data from the 2012 Department of Education's Integrated Postsecondary Education Data System (IPEDS) survey show that in 2012, 5.5 million students (26% of all college students) took at least one online course and 2.6 million students (13%) studied fully online. According to the National Center for Education Statistics (NCES) IPEDS survey, approximately 2 million of the students who studied fully online were undergraduates and 600,000 were graduate students (U.S. Department of Education, 2014).

Online teaching and learning now represent a significant component of higher education in the United States. Although the percentage of students studying online continues to grow rapidly, the overall rate of growth is slowing. A point of balance will likely soon occur where the growth rate of online enrollment begins to decline in conjunction with a decreasing total student population (Clinefelter & Aslanian, 2014).

According to Clinefelter and Aslanian (2014), roughly one third of online students report that they probably would not consider an on-campus program even if it were available. Conversely, there are also a significant number of on-campus students who would not consider enrollment in any online program. Based on the 2014 study, students in online undergraduate classes nationwide most often fit the following general profile:

> Caucasian females between the ages of 25 and 29 who are not the first in their family to attend college. They typically have a total family income of less than $40,000, live in a suburban community, and work full time. English is their first language and they have not served in the military. (2014, p. 28)

Adult online college education enrollment continues to feel the negative effects of the strengthening global economy and new technology-supported instructional models such as blended learning and MOOCs. An estimated 3.2 million students are learning online, roughly 15% of all higher education enrollments. In 2014, enrollment data released by National Student Clearinghouse signal more sobering news for online higher education providers. Total enrollments across all of higher education decreased by 0.8%, with for-profit higher education companies once more in major decline at 4.9% and adults (over 24 years of age) continuing to fall by 3.1%. Since adult online college education enrollment is closely but inversely, associated with general economic performance, it is likely that this trend of declining growth in enrollment will continue in the near-term cycle of economic recovery. The pace of student enrollment

growth continued to slow, from 16% in 2010 to 7% in Fall 2013, and is predicted to drop as low as 2% by 2016 (Fleming, 2014).

According to Allen & Seaman (2014) in a survey designed, administered and analyzed by the Babson Survey Research Group, with data collection conducted in partnership with the College Board and using responses from more than 2,800 colleges and universities, the following factors are likely or very likely to affect online college education in the next 5 years: (a) 67.9% believe there will still be concerns about the relative quality of online courses; (b) 59.8% believe online courses will not be considerably less expensive than face-to-face courses ; (c) 60.2% believe online instruction will be far more different from face-to-face instruction than it is today; (d) 65.9% believe online classes will include more substantial use of student-directed, self-paced components; (e) and 90% believe the majority of college students will be taking at least one course online (Allen & Seaman, 2014, p. 36).

As online programs have matured, two trends have emerged that forecast increasing competition among online education service providers. First, students are enrolling in institutions further from home. Second, the range of program offerings is expanding. Professional fields such as business, information technology, nursing, and criminal justice have the largest online enrollments, but online degrees are now available in specializations such as interior design, game design, museum studies, sign language, real estate, substance abuse prevention, radiology, aeronautics, veterinary assistance, and bioinformatics (U.S. Department of Education, 2014).

As competition intensifies, the convenience of online study is less of a compelling motivation for adult students to enroll in online degree programs. “All the effects of a mainstream market, consumer pragmatism, a slower pace of innovation, tech-digestion, and the ripple effects of regulation and scrutiny, make online education less appealing for its own sake

and more one option among many" (Fleming, 2014, p. 1). Adults seem uninterested in the perceived quality of online programs, and outcomes such as job placement rates and features such as competitive price and credit hour transferability are gaining importance as attractive points of differentiation in the marketplace. In order to compete in this maturing market, online education service providers must clearly articulate what makes their online programs qualitatively distinct and track student outcomes to provide quantifiable data to prospective students.

Some mainly online institutions are growing, such as Southern New Hampshire University, Grand Canyon University, Western Governor's University, and many middle-market public universities. In these cases, online study has been aligned with an attractive mass media marketing campaign or with the value of an otherwise traditional campus-based experience. Grand Canyon University has also interwoven the value propositions of traditional and online education into that of a cohesive brand. State universities are continuing to receive support from a tighter state regulatory environment, which has further regionalized enrollments by making it harder for out-of-state providers to win larger shares in higher growth markets, such as Georgia, Texas, and North Carolina (Fleming, 2014).

For some potential adult college students who have been unable to balance their full-time jobs and the demands of traditional, face-to-face college attendance, distance learning provides unprecedented access to previously unattainable degrees. To that extent, online education expands the potential pool of student applicants. At the same time, however, online courses may also cannibalize traditional classes by diverting students who would otherwise attend classes on campus, but who find it preferable, for one reason or another, to study online (Eisenhauer, 2013).

The distinction between new students and those who migrate from traditional to online settings has important implications for the finances of the institution. An accurate predictive model of the breakeven point for online education must incorporate opportunity costs by modeling students who crossover from traditional to online courses. In order to assess the true return on investment of offering online course options, an institution must determine the mix of new students and migrants at which an online course becomes as financially viable as a traditional classroom. This is especially true given the substantially lower limits on class sizes that have been widely recommended as being optimal for online courses. However, emergent technological innovations in online education such as blended learning, MOOCs, and direct assessment (competency-based) degree programs may drastically reduce the cost per online student that institutions must bear.

Some mature institutions are moving toward a more centralized model to improve quality and efficiency in the production of online content. Best practices include integrating online learning into the core of an institution rather than maintaining online as a discrete and distinct offering or program type. The benefits of centralization include lower costs of production, higher quality content, economics of scale, and an integrated framework for adaptation and continuous improvement.

In the current adult online education market, some providers will continue to pursue "a model that mirrors today's market norm—asynchronous, driven by discussion boards, slide presentations, and recorded lectures—possibly with some uniqueness through experiential learning or differentiation through brand strength, but little innovation" (Fain, 2014, n.p.) This business strategy may support short-term success, but its success is in doubt as the overall future enrollment numbers inevitably decline. Alternatively, providers can invest in "new forms of

online learning through highly experiential models, simulations, social learning, use of open education resources, unbundled offerings, adaptive learning, credit through badges, and competency-based learning" (Fain, 2014, n.p.). Strategically minded providers would do well to become comfortable experimenting with this nontraditional, yet more strategically innovative approach.

Total Quality Management and the Adult Online Education Business Sector

As adult online college leaders assess their performance and develop strategic plans for success and growth in the coming decade, they face a declining rate of enrollment, changing student demographics, and new requirements from industries for which they supply graduates. In order to be successful, adult online college Organizations must adopt a student-driven approach based on cooperation among stakeholders and a never-ending cycle of continuous improvement. Although they were first formulated for a business manufacturing environment, TQM principles apply effectively to the operation of adult online institutions of higher education in the same way that they do in the management of any computer-mediated online business. The TQM philosophy focuses on continual improvements in product and service quality through reducing uncertainty and variability in design, manufacturing, and service processes (Deming, 1986). Deming did not prescribe a specific quality improvement program for organizations. His goal was to change entire perspectives in management, often radically. "Some business managers have criticized Deming because his philosophy is just that: a philosophy" (Evans, 2010, p. 103). It lacks specific prescriptions for organizational action and it does not fit into the traditional American business culture. Deming demonstrated the effectiveness of adopting total quality as a culture with his postwar success supporting the astoundingly rapid Japanese economic recovery. When asked

how he would like to be remembered, Deming replied, “as someone who spent his life trying to keep America from committing suicide" (2010, p. 92).

Deming's management philosophy developed and evolved as he pursued a career in academics and industrial consulting with a lifelong passion for learning. In his early work in the United States, he compiled and propounded a “14 Point system of quality management” (Deming, 1986, p. 23). In Deming's view, variation is the chief contributor to poor quality. According to Yoshida (1994), customer dissatisfaction is more driven by the range of results than the average of results. Processes producing highly variable results disappoint many more customers than low variation processes in spite of higher average quality levels. Similarly, high variability in student performance levels results in higher failure rates and lower student motivation.

The Deming Chain Reaction (1986) states that improvements in quality lead to lower costs because they result in less rework and better use of time and materials. Lower costs, in turn, lead to productivity improvements. Deming believed that businesses should not exist simply for profit; they are social entities that must take responsibility for providing jobs by improving the firm's competitive position. An online institution of higher education can achieve and sustain a higher market share by providing a higher quality learning experience for its students.

Deming (2000) synthesized the underlying foundations of his 14 Points in what he called a system of profound knowledge. Understanding the elements of this "system" provides critical insights needed for designing effective adult online education learning environments. Deming's system of profound knowledge (2000) consists of four interrelated parts: appreciation for the system, understanding variation, theory of knowledge, and psychology.

The components of any system must work together if the system is to be effective. In order to optimize the system, managers must understand the process components and cross-functional boundaries and align them toward a common vision or goal. In institutions of adult online college education, as in any competitive business, each part of the organization must compete for scarce resources and will be tempted to optimize its individual performance without consideration of the overall organizational value creation process. For example, administrators, faculty, and facility support functions must seek to optimize not only their particular tasks, but also, and more importantly, the value created for students and the communities they represent. Sub-optimization (doing the best for individual components) results in losses to the overall system. Teamwork helps to break down barriers between departments and individuals. Internal competition contributes to building barriers. Lack of cooperation leads to poor quality when departments cannot understand what their internal customers want and do not get what they need from their internal suppliers. Communities of practice spanning multiple functional processes or inter-organizational boundaries can be organized by leadership to facilitate teamwork and cooperation (Kowta, Sita, & Chitale, 2012). The aim of any system should be for all stakeholders to benefit over the long term. Providing the optimal combination of high quality instruction, competent administration, and technical resources to students can only be achieved when the entire organization is managed for optimal student-perceived quality in learning experiences.

Deming suggested that management first understand the causes of variation, and then work to reduce variation through improvements in technology, process design, and training. Causes of variation stemming from the designed-in dynamics of the organization’s system of operation are management's responsibility. If anything, individuals’ attempts to fix problems only increase the variation. Motivation can be better achieved from trust and competent

leadership than from slogans and short-term goals. Excessive variation results in products that fail or perform erratically, providing inconsistent service that does not meet customers' expectations. In adult online college, high variability in student performance levels results in higher failure rates and lower student motivation. In an online academic context, grading students' work is essential, but does not add value to the educational product. Inspection should be used as an information-gathering tool for improvement, not as a means of "assuring" quality or blaming students who fail to meet certain assessment criteria.

By understanding and seeking to reduce the causes of variation in student performance, teachers can eliminate unnecessary, non-value-added costs caused by attrition and class repetition. Assessment of student learning outcomes is traditionally based on retention rates and grade point averages, but now in the increasingly competitive adult online college business sector, assessing learning outcomes has taken on greater significance and sophistication. As an increasing number of institutions of higher learning adopt online teaching technologies with the expectation of increasing enrollment while simultaneously reducing cost, the institutional standard of student learning outcomes must somehow still be maintained through enhanced course design and online faculty practices.

Deming emphasized that developing knowledge is not possible without theory. Theory allows one to understand cause-and-effect relationships that can be used for prediction and rational management. Any rational plan, however simple, requires prediction concerning conditions, behavior, and comparison of performance. Predictions should be grounded in theory. "Scientists have long understood the relationships among observation, prediction, and theory. Deming's major contribution was to tie these concepts together in the context of business"

(Evans, 2010, p. 99). Understanding the assumptions and theory behind statistical tools and techniques is vital in order to apply them correctly.

To enhance quality and to reduce variation in industry, Deming advocated a never-ending cycle of product/service development, manufacture/service delivery, test, sales, and customer surveys followed by redesign and improvement. He claimed that higher quality leads to higher productivity, which in turn leads to long-term competitive strength.

Deming advocated a never-ending cycle of product/service development, which he described as the PDSA, "plan, do, study, act" quality cycle, continuous improvement process (see Figure 1).

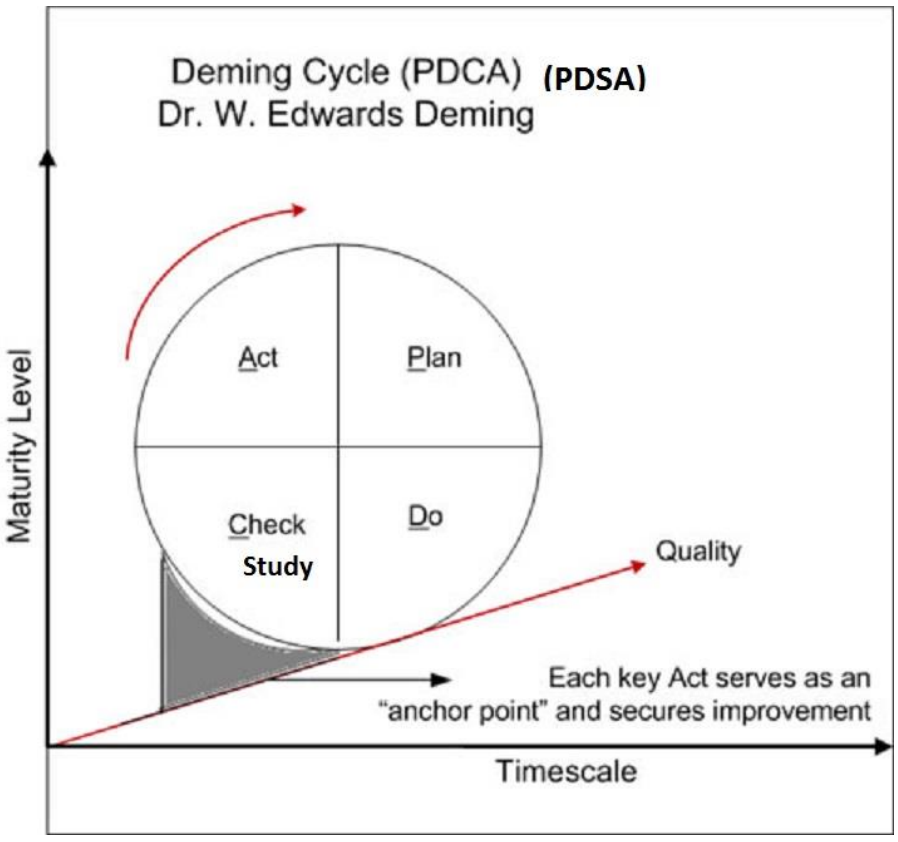

Figure 1. Total quality management plan do study act cycle.

Note. The W. Edwards Deming Institute (2015), the PDSA Cycle.

This concept and application was first introduced to Deming by his mentor, W. Shewhart of the Bell Laboratories in New York. It is often confused with a design and development process called PDCA (Plan Do Check Act) employed in engineering.

The PDSA cycle is a series of steps for gaining valuable learning and knowledge for the continual improvement of a product or process. It is a management process rather than an engineering process. While "check" connotes inspection, a non-value added step, "study" is defined as analysis in order to gain understanding. On Nov. 17, 1990, in a letter to Ronald Moen regarding the manuscript for *Improving Quality Through Planned Experimentation*, coauthored by Moen, Thomas R. Nolan and Lloyd P. Provost, Deming (1990) wrote, "Be sure to call it PDSA, not the corruption PDCA." Deming (1991) also commented about a chart labeled plan-do-check-act (Peterson, 1997). "What you propose is not the Deming cycle," he wrote. "It is the PDSA Cycle, not PDCA. Check means to hold back. How PDCA ever came into existence I know not" (1991, n.p.)

The cycle begins with the "Plan" step. This includes identifying a goal or purpose, formulating a theory, defining success metrics and putting a plan into action. These activities are followed by the "Do" step, in which the components of the plan are implemented in the context of the process of interest. Next comes the "Study" step, where outcomes are monitored to test the validity of the plan for signs of progress and success, or problems and areas for improvement. Finally, the "Act" step closes the cycle, integrating the learning generated by the entire process, which can be used to adjust the goal, change methods or even reformulate a theory altogether. These four steps are repeated over and over as part of a never-ending cycle of continual improvement (W. Edwards Deming Institute, 2015). At the completion of each cycle, the opportunity exists for the "gain" in process quality to be made permanent and to become

institutionalized, “ratcheting up” performance, and providing a new, higher base upon which to build.

Deming’s PDSA model is similar to Kolb’s experiential learning model: Concrete Experience → Reflective Observation → Abstract Conceptualization → Active Experimentation. Management through continuous quality improvement is analogous to experiential learning in that it will reduce variability in student performance. According to Kolb (1984), experiential learning theory offers a fundamentally different view of the learning process from that of the behavioral theories of learning or subjective cognitive theories of learning that underlie traditional educational methods. “From this different perspective emerges some very different prescriptions for the conduct of education, the proper relationship among learning, work, and other life activities, and the creation of knowledge itself” (p. 20). Kolb’s perspective on learning is called "experiential" for two reasons. The first is to tie it clearly to its intellectual origins in the pioneering work of persons such as Lewin and Dewey, and second, to emphasize the central role that experience plays in the learning process. This differentiates experiential learning theory from theories of learning that give primary emphasis to abstract symbols, and from theories that deny any role for subjective mental experience in the learning process.

According to Lewin (1951), learning is best facilitated by experience followed by collection of data and observations about that experience. The data are then analyzed and the conclusions of that analysis are fed back to the actors in the experience for their use in the modification of their behavior and choice of new experiences. In this cyclical model of learning, immediate concrete experience elicits observation and reflection. These observations are assimilated into a "theory" from which new implications for action can be deduced, and these implications or hypotheses then serve as guides in acting to create new experiences. This model

places emphasis on here-and-now concrete experience to validate and test abstract concepts. Immediate personal experience provides the concrete reference point for testing the implications and validity of ideas created during the learning process.

According to Kolb (1984), Lewin borrowed the concept of feedback from electrical engineering to describe a social learning and problem-solving process that generates valid information to assess deviations from desired goals. This information feedback provides the basis for a continuous process of goal-directed action and evaluation of the consequences of that action. Lewin believed that much individual and organizational ineffectiveness could be traced ultimately to a lack of adequate feedback processes." An imbalance between observation and action—either from a tendency for individuals and organizations to emphasize decision and action at the expense of information gathering, or from a tendency to become bogged down by data collection and analysis" (1984, p. 22).

Dewey's model (1938) of the learning process clarifies the developmental nature of learning implied in Lewin's conception of it as a feedback process by describing how learning transforms desires and impulses into higher-order purposeful action. The formation of purposes is a complex intellectual operation involving: a. observation of surrounding conditions; b. knowledge of what has happened in similar situations in the past, obtained partly by recollection and partly from communications, advice, or warnings from those who have had a wider experience; and c. judgment, which combines what is observed and what is recalled to in order to analyze what they signify.

> A purpose differs from an original impulse and desire through its translation into a plan and method of action based upon foresight of the consequences of action under given observed conditions in a certain way. . . . The crucial educational problem is that of procuring the postponement of immediate action upon desire until observation and judgment have intervened. . . . Mere foresight, even if it takes the form of accurate prediction, is not, of course, enough. The intellectual anticipation, the idea of

> consequences, must blend with desire and impulse to acquire moving force. It then gives direction to what otherwise is blind, while desire gives ideas impetus and momentum. (Dewey, 1938, p. 69)

Dewey's model of experiential learning is graphically portrayed in Figure 2. Dewey described learning as dialectic process integrating observations, experience and concepts, and action. Desires give ideas their moving force, and ideas give direction to impulse. Postponement of immediate action is essential for observation and judgment to intervene, and action is essential for achievement of purpose. It is through the integration of these opposing but symbiotically related processes that sophisticated, mature purpose develops.

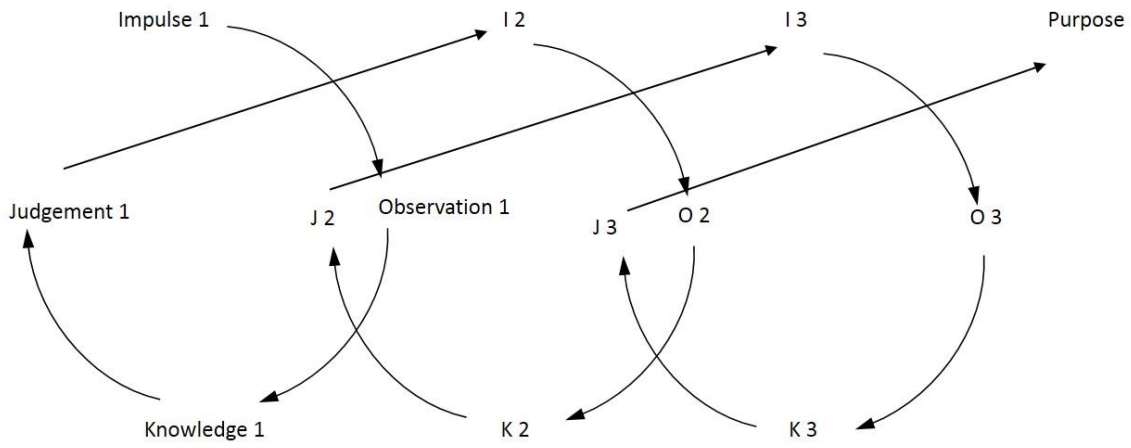

Figure 2. Dewey's model of purposeful learning.

Note. From Kolb, 1984.

The theory of experiential learning rests on a different philosophical and epistemological base from behaviorist theories of learning and idealist educational approaches. The emphasis on the process of learning as opposed to behavioral outcomes distinguishes experiential learning from idealist approaches and from the behavioral theories of learning (Kolb, 1984). Modern

versions of these latter approaches are based on the empiricist concept of elements of consciousness. These elements are "mental atoms, or, in Locke's terminology, simple ideas that always remain the same . . . . The various combinations and associations of these consistent elements form our varying patterns of thought" (Kolb, 1984, p. 26). This concept of constant, fixed elements of thought has defined modern approaches to learning and education, resulting in a tendency to define learning in terms of its outcomes. Depending on the theoretical view, these outcomes might be knowledge accumulated in a storehouse of facts or habits representing behavioral responses to specific stimulus conditions. If ideas are seen to be fixed and unchangeable, then it seems possible to measure how much someone has learned by counting the number of these fixed ideas that have been accumulated. Experiential learning theory proceeds from a different set of assumptions. "Ideas are not fixed and immutable elements of thought, but are formed and re-formed through experience" (Kolb, 1984, p. 26). Experiential learning is a process whereby concepts are generated within, and continuously modified by, experience. No two thoughts are ever the same, since experience always intervenes. "When viewed from the perspective of experiential learning, the tendency to define learning in terms of outcomes can become a definition of nonlearning, the failure to modify ideas and habits as a result of experience is a failure to learn." (p. 26)

> As an individual passes from one situation to another, his world, his environment, expands or contracts. He does not find himself living in another world but in a different part or aspect of one and the same world. What he has learned in the way of knowledge and skill in one situation becomes an instrument of understanding and dealing effectively with the situations which follow. The process goes on as long as life and learning continue. (Dewey, 1938, p. 44)

Deming (1986) acknowledged that individual people differ psychologically. However, most people share universal needs for love, dignity, and self-esteem. Situations that fail to fulfill these needs smother intrinsic motivation. An effective online instructor must be aware of

individual differences and work toward optimizing each person's unique abilities and contributions. Effective adult online college instructors should also understand that students learn in different ways and at different speeds, and manage the online classroom environment accordingly. If students do not derive satisfaction from their learning experiences, they will be less productive and successful.

Online faculty members must also continually renew their skills. They must develop effective new approaches, and revise older ones. Professional development and training for faculty members increases morale and demonstrates that the online institution is sincerely dedicated to supporting its faculty and staff members by investing in their future. According to Deming (1986), no organization can work optimally without the trust and mutual respect of its members. Fear is manifested in many ways: fear of failure, fear of reprisal, fear of the unknown, fear of relinquishing control, and fear of change. Fear does not motivate people; instead, it constrains people and prevents the system from reaching its full potential. Fear encourages short-term thinking.

Early attempts to apply Deming's quality management principles to higher education met with limited success. Applying TQM to traditional educational institutions is not always effective at producing meaningful improvement. According to Koch and Fisher (1998), TQM initiatives frequently focus on ancillary and trivial process improvement, such as "the number of books checked out per student librarian, square feet cleaned per day by janitorial staff, financial aid applications processed per staff member, or credit hours generated per faculty member" (p. 667). In the last analysis, TQM can do little to improve an administrator or faculty member who lacks positive ethical values and or a compelling vision. For example, "of what long-term value to society is more efficient campus bill collection if academic standards are deficient, faculty

contact with students is minimal, and administrative ranks are bloated?" (Koch & Fisher, 1998, p. 667). Quality in education is a complex issue with varying conceptualizations, and this poses problems in formulating a single, comprehensive definition (Sahney, Banwet, & Karunes, 2004). It includes inputs in the form of students, faculty, support staff, and infrastructure; processes in the form of the learning and teaching activity; and outputs in the form of the enlightened scholars or disappointed students that withdraw from the system.

Another challenge is that there is disagreement among the groups in higher education, faculty, students, and administration, as to who the true customers are. The Malcolm Baldrige National Quality Award Education criteria, which were adapted from the Baldrige Award criteria for business, avoid using the term customer. In addition, the "customer focus" and "satisfaction," category has been changed to "student focus" and "student and stakeholder satisfaction." The use of "student" and "stakeholder" in place of "customer" may communicate to educational institutions that students are the only customers and lead them to view students' satisfaction as their only ultimate objective (Sahney et al., 2004). However, there are key differences between adult online college students and customers in normal retail commerce, including their responsibility to provide proof of academic qualifications and the high cost of changing schools once enrolled.

The Quality Matters (QM) program offers quality assurance through a research-based rubric for online course design (Ralston-Berg & Nath, 2009). Because the QM rubric is based on academic research initiated most often by content experts or instructors, questions arise about whether the consumers of those courses have a differing perspective on what makes a quality online course? The QM rubric is focused mainly on operational aspects of online course delivery. In order to assess not only delivery, but interactions, and other aspects of the CoI

framework, additional tools are necessary, even so, it is useful to assess the validity of the QM rubric from the students' perspective. "Do students agree that items presented in the QM Rubric indicate quality? Are items in the QM Rubric perceived as contributors to student success?" (Ralston-Berg, 2014, p. 117).

In 2011, a survey was completed to assess the extent to which the QM Rubric aligns with online student's perspectives of quality in online higher education. Data were collected through an online survey made available through a unique URL by a contact person at each participating institution. Participants were currently enrolled in or had taken, online, for-credit courses. Participants ranged in age from 18 to 65+ with the largest group being 26 to 44 years of age. They represented 25 areas of study and a range of online experience from 1 to 9+ courses completed. Most participants were enrolled in undergraduate four-year degree programs. The majority were enrolled in two or more courses and reported being comfortable or very comfortable with technology. Information here describes cumulative results for a total online sample of 3,160 students from 31 institutions in 22 states.

The instrument contained QM items from the 2008–2010 Rubric converted to student-centered language, open response questions about quality, and demographic information. Participants were asked to consider only the online course environment when rating each online course feature in terms of how valuable they thought it to be. Students rated each course characteristic on a four-point Likert scale as to how each item contributes to student success (0=not at all important – does not contribute to my success; 1 =important; 2 = very important; and 3 = essential, could not succeed without it).

Of the 43 items included in the QM Rubric, only four were rated higher than 2.50 indicating the highest perceived level of student perceived importance. These items are listed in

order of importance. “Clear instructions tell me how to get started and how to find various course components. “(2.66), “Technologies required for the course are readily available – provided or easily downloadable.” (2.62). “Criteria for how my work and participation will be evaluated are descriptive and specific.” (2.52). “Navigation throughout the online components of the course is logical, consistent, and efficient” (2.51) (Ralston-Berg, 2014, p. 118).

These student-perceived quality factors represent valuable areas of investigation. Improvements in these aspects of adult online college students experience have the potential to yield an excellent return on investment. The most effective online college institutions will develop best practices of operation that employ evolving technology to offset the decreasing demand for new graduates with more cost effective instructional processes, reducing failure rates, and producing precisely qualified candidates for the careers of the future.

Knowledge Management (KM) and adult online college Education

In adult online college educational environments, not only students, but also faculty and administrative staff participate in the sharing of information and generation of knowledge. The central thrust of KM in adult online college education is to capture, organize, and make available the course subject information so that knowledge can be acquired by students. The scope of KM in the 21st century has expanded to encompass the whole bandwidth of information and knowledge likely to be useful to the institution, including knowledge external to the organization. This includes knowledge from vendors and suppliers as well as traditional knowledge originating in the scientific and scholarly community. As adult online college education has evolved to make the application of computer technology infrastructure fundamental to its success, KM has emerged as a way to understand how to enrich learning through the acquisition, distribution, and creation of knowledge in online classes.

KM theory is a concept that arose approximately in the early 1990s. According to Koenig (2012), the operational origin of KM, as the term is understood today, arose in the management consulting community and from there the principles of KM were rapidly spread by consulting organizations to other disciplines. Consulting firms quickly realized the potential of the Intranet (in-house implementations of HTML based document repositories) for linking together their own geographically dispersed knowledge-based organizations. Once having gained expertise in how to take advantage of intranets to connect their practices, management consultants quickly understood that the expertise they had gained was a product that could be sold to clients. This new product needed a name, and the name knowledge management was chosen. The Gartner Group created a definition of KM, which was perhaps the most frequently cited: "Knowledge management is a discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's information assets. . . .databases, documents, policies, procedures, and previously un-captured expertise and experience in individual workers" (Duhon, 1998, p. 10).These same companies had successfully sold their customers on the value of knowledge as intellectual capital in the 1980s, and that created a solid basis for the recognition of information and knowledge as essential assets for competitive advantage.

KM is an intelligent organizational function by which raw data are gathered and organized into information elements. KM processes transform these information elements into knowledge. Data residing in the memories and experiences of the students, faculty, and administrative staff, in the organization’s datasets, file servers, Web pages, e-mail, and other systems from all structured and unstructured data sources “are integrated under a single Enterprise Information Portal (ElP) that can be accessed through a, usually personalized, Web-

based interface" (Geisler & Wickramasinghe, 2009, p. 6). KM is the process through which organizations generate value from their knowledge-based assets. Most often, generating value from such assets involves sharing them.

KM encompasses not only the creation of knowledge, but also the dissemination and utilization of knowledge. KM helps members of an organization gain insight and understanding from their own experiences. Specific KM activities focus faculty and staff member's activities on acquiring, storing, and using knowledge for teaching and decision-making. "KM is the management of the organization toward the continuous renewal of the organizational knowledge base" (Geisler & Wickramasinghe, 2009, p. 6). KM activities also protect intellectual assets from decay, provide increased organizational flexibility, and underpin institutional intelligence. This means, for example, creating supportive organizational structures and putting into place Student information portals, learning management systems, and supporting infrastructure for teamwork and effective distribution of knowledge. KM complements and enhances other organizational initiatives such as total quality management, competitive student recruitment, and faculty development, essential tools for sustained competitive success.

Looking at KM historically through the stages of its development reveals much about what constitutes KM (Koenig, 2012). The initial stage of KM development concerned how to deploy intra-networking technology (hypertext-based web servers) to increase effective use of information and knowledge. The second stage of KM emerged when simply deploying new technology was shown to be insufficient to enable effective information and knowledge sharing. Human and cultural dimensions also needed to be addressed. It became clear that KM implementation would involve fundamental changes in organizational culture. Two major themes from business were incorporated in KM.

The first major theme was the work of Senge (1990) on the learning organization. Senge's discipline of systems thinking defines higher-level organizational functions which are the product of synergy (the group is more than the sum of its individual members). As noted by Senge, organizations only learn through individuals who learn. Yet, individual learning does not necessarily result in increased organizational learning or knowledge. Team learning is "synergistic" (Senge, 2006, p 10). An additional important area of development in KM development arose from an awareness of the importance of the arrangement, description, and structure of knowledge in content management systems. The key concept emphasized in this stage of KM development is taxonomical organization. In adult online college education, this KM process serves as a basis for course development, for learning management, and for both formative and summative assessment.

The second major theme was Nonaka's work on "tacit" knowledge and how to discover, cultivate, and convert it (Nonaka, & Takeuchi, 1995). In KM literature, knowledge is most commonly categorized as either explicit (documented) or tacit (residing in people's heads). A more useful characterization is to describe knowledge as explicit, implicit, and tacit. Explicit information or knowledge is set out in a tangible form. Implicit information or knowledge not is expressed in tangible form (but it could be). Tacit information or knowledge would be extremely difficult to express in tangible form without a conversion process. Polanyi (1966) viewed knowledge as an object existing in two forms: explicit or factual knowledge (i.e., "know-what") and tacit or experiential knowledge (i.e., "know-how").

The process of new knowledge generation by transforming one form of knowledge into another has been described as the knowledge spiral (Nonaka 1994). Nonaka and Toyama described four types of *Ba* corresponding to the four stages of "knowledge conversion"-

socialization, externalization, combination, internalization. These ba provide platforms for specific steps in a continually expanding knowledge-generating spiral (Nonaka & Takeuchi, 1995) (see figure 3).

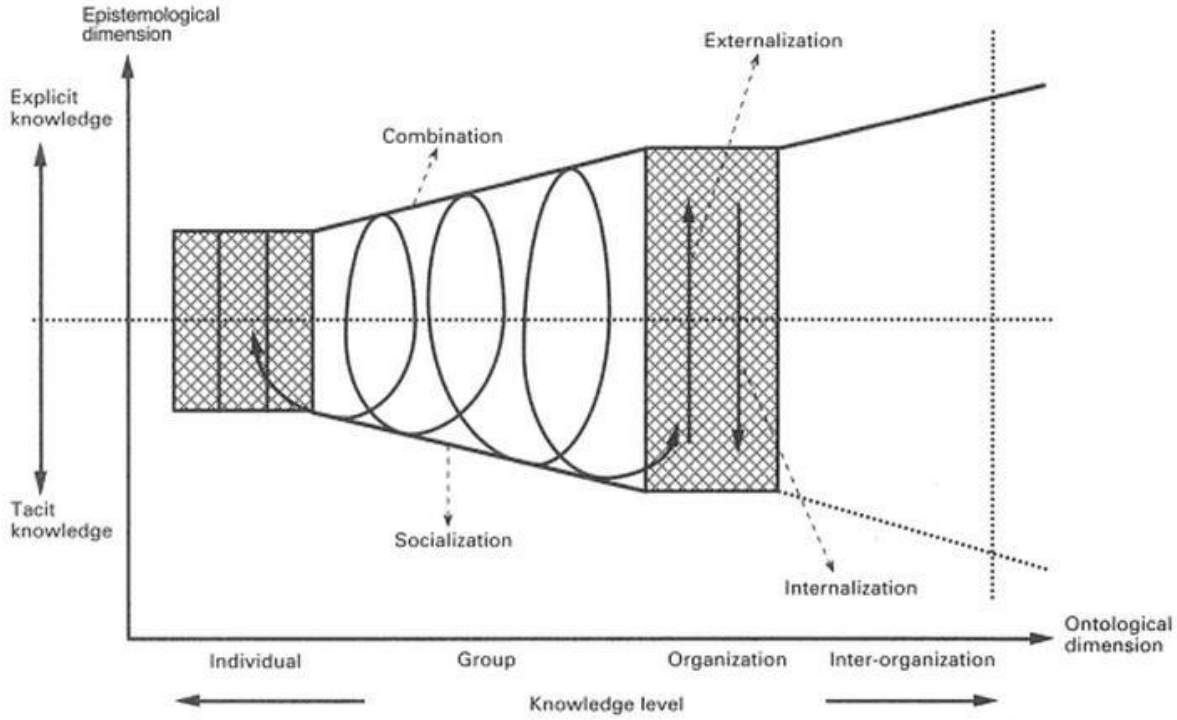

Figure 3. *Knowledge generation spiral.*

Note: From Nonaka & Takeuchi, 1995.

Throughout these transformations of knowledge through the knowledge spiral, new knowledge is being continuously created, thus potentially bringing many benefits to organizations. By transforming tacit knowledge into explicit knowledge, for example, a student is able to capture the expertise of other individuals, thus expanding the total organizational memory. Insights gained by learners during the metacognitive processes of knowledge generation allow double loop organizational learning to take place (Wickramasinghe, 2006). Processing explicit knowledge requires "collecting" KM methodologies and processing tacit

knowledge requires "connecting" KM methodologies. "Converting" KM processes, for example demonstrations, assessments and debriefings, are essential for transforming implicit tacit knowledge into explicit knowledge. A classic example in the KM literature of true "tacit" knowledge is Nonaka and Takeuchi's example of the kinesthetic knowledge that was necessary to design and engineer a home bread maker. This tactile *know how* could only be gained or transferred by having engineers work alongside bread makers and learn the motions and the "feel" necessary to knead bread dough (Nonaka & Takeuchi, 1995).

The concept of tacit knowledge may also support a conversion strategy for identifying, creating, representing, and distributing insights, practices, and experiences in an online education context (Oztok, 2013). In the context of online education, however, there have been few studies investigating tacit knowledge. Nonaka and Takeuchi's (1995) SECI model contains suggested processes for cultivating and facilitating knowledge generation that are relevant in an online community of inquiry. The SECI model articulates a matrix of knowledge conversion processes by exploring the dynamic relationship between tacit knowledge and explicit knowledge.

Built on Polanyi's (1966) concept of tacit knowledge, the SECI model was developed to describe and understand the knowledge creation process in organizations, particularly in commercial corporations. This model suggests that "knowledge creation is a continuous, self-transcending process through which one transcends the boundary of the old self into a new self by acquiring a new context, a new view of the world, and new knowledge" (Nonaka, Toyama, & Konno, 2000, p. 8).

Falconer (2006) described the four SECI modes of knowledge conversion as: a. Socialization: the process of converting new tacit knowledge through shared experiences (tacit to tacit transfer, through implicit learning or 'learning by doing'). b. Externalization: the process of

articulating tacit knowledge into explicit knowledge (tacit to explicit transfer through communication). c. Combination: the process of converting explicit knowledge into more complex and systematic sets of explicit knowledge (explicit to explicit transfer by distribution). d. Internalization: the process of embodying explicit knowledge into tacit knowledge (explicit to tacit transfer by systematic procedures of communication) (2006, p. 147). According to the SECI model, knowledge creation is a continuous process of dynamic interactions between tacit and explicit knowledge. "Such interactions are shaped by shifts between different modes of knowledge conversion, not just through one mode of interaction" (Nonaka et al., 2000, p. 11).

The SECI model can be effectively employed as a framework to explore knowledge in a business organization. However," it is limited in exploring the foundations for and effects of social networks on knowledge sharing in virtual communities" (Oztok, 2013, p. 28). The SECI model does not identify the resources that are available in a social network and how they can become available for individual members use. Oztok (2013) argued that since meanings in these environments can be explicitly tied to the context, lack of background knowledge could lead to misinterpretation, to lack of effective communication, and to disengagement from the learning community. Beyond cursory introductory activities (posting teacher and student biographies in week one), however, online education courses often provide class members little chance to obtain such contextual knowledge, or to learn more about their fellow students.

Nonaka and Konno's (1998) concept of *Ba* is defined as a context where knowledge can be created, shared, and utilized. They suggest that putting tacit knowledge into play might be useful for online communities as *Ba* could support transfer of knowledge by encouraging individuals to share each other's knowledge and construct their own knowledge through socialization, externalization, combination, and internalization. Therefore, creating a *Ba*-like

environment could provide an opportunity for online students to engage with each other in more meaningful ways. Oztok (2013) argued that online class activities that reveal each individual class member's expertise, professional history, and personal research interests facilitate *Ba* creation and enhance knowledge generation,

Summarizing the importance of social constructivism for online learning practices, Swan (2005) suggested that learning is essentially a social activity. Meaning is created through collaboration and interactions with others. Social constructivism in online education contexts "highlights the role of social interactions in meaning making . . . [and] knowledge construction" (p. 5). Therefore, tacit knowledge sharing is critical because it provides many opportunities for collaboration and situated learning to occur. Over the term of the online class these opportunities coalesce to create a perceptual space in which individuals can share their expertise and knowledge. One important practical approach is operationalizing individuals' tacit knowledge. In the context of an online community, this tacit knowledge is defined as each individual member's expertise, professional history, and personal research interests. Sharing this tacit knowledge could help to create an online learning environment where individuality is supported and a sense of community is fostered. Knowing who their peers are and what kind of expertise they have, students could more easily better sense of the discussion as they transfer the outcomes of learning into their professional practices while regulating their own learning process (Lave & Wenger, 1991).

To form an online learning community, therefore, trust must be created and sustained by the members of the community (Oztok, 2013). The extent to which this trust can be created depends on the community's shared processes for managing online identities and developing social capital. Each individual's attitude, personal motivations, and expectations for the online

course affect the level of commitment to the online class as a learning community. However, in the end, each student's personal commitment to the class as a knowledge generating community of inquiry "completely depends on the extent to which individuals would like to reveal and share their tacit knowledge since that knowledge is privately held" (Oztok, 2013, p. 31). In adult online college classes, the success of members' participation in the knowledge creation process may depend in part on how well they identify and interrelate with each other, reveal their thoughts and emotions to each other, and achieve synergistic syntheses by revising individually held preconceptions and incorporating new community generated ideas.

Synthesis and Critical Analysis of Recent Literature

CoI Model in adult online college Education

Traditional pedagogy employs an "information banking" or "deposit and withdrawal" model of instruction that isolates the learners from the instructor and discourages collaboration among the learners themselves. Freire (1974) called the orientation that conceives of education as the transmission of fixed content the "banking" concept of education:

> Education thus becomes an act of depositing, in which the students are the depositories and the teacher is the depositor. Instead of communicating, the teacher issues communiques and makes deposits which the students patiently receive, memorize, and repeat. This is the "banking" concept of education, in which the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits. …in the last analysis, it is men themselves who are filed away through the lack of creativity, transformation, and knowledge in this (at best) misguided system. . . . Knowledge emerges only through invention and reinvention, through the restless, impatient, continuing, hopeful inquiry men pursue in the world, with the world, and with each other. (p. 58)

Bruner (1966) argued that the purpose of education is to stimulate inquiry and skill in the process of knowledge getting, not to memorize a body of knowledge: "Knowing is a process, not a product" (p. 72). The term *community of inquiry* was originally used by Lipman (1991) to refer to a teacher-facilitated critical learning community where students "listen to one another

with respect, build on one another's ideas, challenge one another to supply reasons for otherwise unsupported opinions, assist each other in drawing inferences from what has been said, and seek to identify one another's assumptions" (p. 15). According to Garrison, Anderson, and Archer (2000) student participation in a CoI is a valuable process for cognitive development because the student's participation supports his or her future success in the workplace, where collaboration skills are highly valued.

The CoI, a framework for online educational practice proposed by Garrison et al. (2000), conceives a tri-modal model of processes supporting instruction and learning consisting of interrelated but separately definable phenomena, which they called *presences* (see Figure 4).

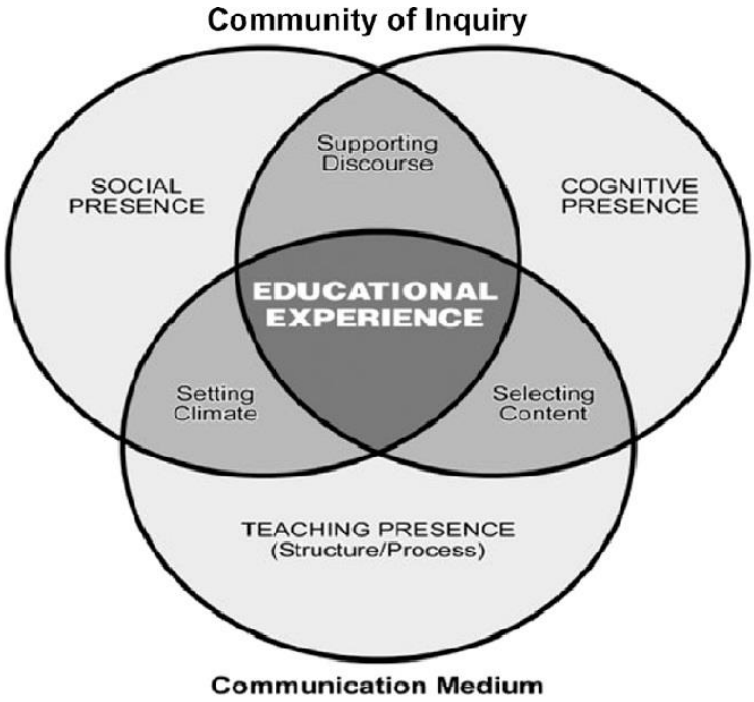

Figure 4. Community of inquiry model.

Note: From Garrison et al., 2000.

In the CoI model, the effects of the presence of the teacher, the fellow students, and the student himself or herself each play an essential role in creating the critical engagement necessary for sensing, assessing, and integrating new information.

Teacher Presence

Teacher presence is defined as timely, encouraging, individualized feedback from an online instructor (Ke, 2010). Many students say that they prefer that the instructor lecture rather than engage them in active, collaborative, inquiry-based learning. These preferences are explained when framed in the context of human cognitive development (Perry, 1970, Belenky, et al., 1986, West, 2004). Higher education requires teachers to nudge students grudgingly forward along paths of cognitive development that lead to the practice of critical thinking and intellectual maturity. Helping students to move on from a simple reliance on undisputed external pedagogical authority, to a more mature, scholarly state of relative rationalism has traditionally been a fundamental goal of undergraduate higher education.

Higher-level cognitive development of students is a "lonely and uncomfortable" progression through which each must journey. Each student's intellectual maturity progresses from dualism (the teacher is the sole authority figure) to multiplicity (many valuable points of view) to committed relativism (oneself as an authority). By understanding these stages in cognitive development, a teacher can simultaneously empathize with the student's frustrations while persistently guiding and encouraging further intellectual growth (West, 2004). With this support, students can outgrow dualistic, "right/wrong" thinking in favor of evaluating multiple perspectives and eventually develop the maturity necessary to embrace multiple perspectives in a relativistic world. According to Wang (2010), e-learning practitioners should pay close attention to integrating individual motivation, learning process support, and organizational support to

ensure successful completion of e-learning courses, fostering a participative and completion oriented culture.

As online curricula push towards standardization, the opportunity for faculty to modify assignments, class activities, and course materials is sometimes reduced. This has not, however, eliminated the potential of faculty to be active drivers of the instructional experience and student learning. Lesson-planning strategies should drive instructor-student interaction, class collaboration, and critical thinking. The online instructor must become a strategic educator through the purposeful use of instructional strategies, engagement strategies, and both formative and post instructional assessment techniques (Simpson, 2014). The students' ability to interface with and create media draws upon skills from multiple levels of higher learning including analysis, application, and creation. The skill development that takes place at higher orders of thinking facilitates the development of a broader focus on multi-literacies and multimodalities in learning across many integrated disciplines (Kress & Selander, 2012).

Andragogy as the process of teaching in adult education was distinguished from pedagogy by Knowles (1980), who discovered, through his work with adults, that instructors needed to carefully consider the actual interests of learners instead of focusing on what instructors unthinkingly assumed were learners' interests (Carlson, 1989). According to Knowles (1980, 1984), the best adult educational experiences were cooperative, guided interactions between the teacher and learner with many available resources. Demands of the online learning environment require educators to facilitate courses in ways that are very different from face-to-face classroom settings (Palloff & Pratt, 1999).

Knowles developed a set of assumptions that supported online andragogy.

- Adults are self-directed learners.

- Adult learners bring a wealth of experience to the educational setting.
- Adults enter educational settings ready to learn.
- Adults are problem-centered in their learning.
- And adults are best motivated by internal factors (Knowles, 1980).

The assumptions of andragogy contrast sharply with the assumptions of pedagogy, which suppose that young learners are dependent personalities who bring little or no experience into the educational activity and participate because they have been told they must do so. Pedagogical subject matter is sequenced logically and centered on the instructor's presentation schedule versus personal learner needs, and the motivation to learn the subject matter is mostly external, such as from parents or teachers (Knowles, 1984).

Although Knowles (1984) first viewed andragogy as being dichotomous to pedagogy, later, however, he viewed andragogy and pedagogy as being on a continuum, noting that there were times when either approach might be appropriate based on circumstances and needs of the learner. According to Burge (1988), andragogical assumptions can help educators create a more learner-centered approach to online education by balancing demands of the course, the institution, the facilitator, and learner needs.

Andragogy can be used as a beneficial starting point for approaching the designing of adult online learning environments (Blondy, 2007). However, andragogical assumptions should be utilized in moderation based on the type of course and student preferences. Online courses must be carefully structured to allow flexibility with learner input regarding course goals and assignments, draw on learner experiences" (p. 127), and increase course value to the participants while staying in harmony with institutional regulations and requirements. Learners must be provided with clear expectations regarding online communication to foster interaction in the

online environment, and interactivity and interdependence should be actively encouraged. "Facilitators must be available for guidance so that learners receive direction on an individual basis. Feedback from both the facilitator and peers must be frequent and sincere to foster trust, mutual respect, and collaboration" (p. 127).

Social Presence

Social presence is "the projection of learners' personalities and perspectives into a community of inquiry through use of emotional expression, open communication, and various means to establish group cohesion" (Garrison et al., 2000).

Nonaka and Toyama (2003) employed the Japanese concept 把, *Ba,* to describe a shared space for knowledge generation through stages of knowledge conversion. This space can be physical (an office, dispersed business space), virtual (email, teleconference), mental (shared experiences, ideas, ideals) or any combination of these. These *Ba* offer platforms for specific steps in the knowledge spiral process. In adult online college education contexts, *Ba* provides a platform for advancing individual and/or collective knowledge through the four stages of knowledge conversion: a. socialization, b. externalization, c. combination, and d. internalization.

A successful implemented KM initiative must not degrade *Ba* or lead to a deterioration of knowledge created or the capability to integrate members into the organization (Westelius & Mårtensson, 2004). In adult online college classes, the success of members' participation in the knowledge creation process depends on how well they interrelate with each other, reveal their thoughts and emotions to each other, and achieve synergy by critically reevaluating their preconceptions and incorporating new ideas into their personal beliefs.

According to Fain (2014), online education service providers need to think more deeply about systemic challenges related to their perceived quality and customer experience. Online

andragogy should be "a distinct approach to teaching and learning that encourages highly experiential, "problem- (not content-) centered learning," and is practically oriented and linked to professional competencies and outcomes." "Providers serious about andragogy will offer more collaborative components online through use of connecting technologies, social learning, and mobile tools that can offer comparable, if not more compelling, experiences and outcomes" (Fain 2014, n.p.).

Cognitive Presence

Cognitive presence is the student's contribution to the online learning experience through a combination of self-efficacy and individual effort (Shea & Bidjerano, 2010). Cognitive presence is "the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication" (Garrison et al., 2000, p. 89). Garrison, Anderson, and Archer (2001) suggested that measures of cognitive presence are "a means to assess the systematic progression of thinking over time" (p. 11).

Novelty, combined with data presented across a wide spectrum of content areas, elicits and engages many learning modalities and multiple intelligences. A novel experience captures a learner's attention and satisfies an essential need of his or her mind. Human beings continually seek exposure to new experiences and stimuli, and once each is fully understood, they seek yet another unknown data thread or experience to master. Novel experiences are deeply rooted in human development processes, children move from one novel experience to the next, gaining understanding, then setting each aside, to look for the next new experience. Instruction with intense sustained attention to a single detailed topic is convenient for the teacher but can be frustrating and inefficient for adult online college students who are suffering the mental stress of trying to rein in their naturally wandering, novelty seeking minds. This need for novel, yet often

recursive and familiar interaction, might be a reason why some adult online college students find social media web sites interesting and enjoyable, and why, conversely, they find online college class activities frustrating, and boring.

In this review of literature pertaining to CoI and online learning, two additional, emergent presences were noted. The first is information presence (ergodic dialog). Palmer (2010) described an ideal learning community as a community of truth. In a subject-centered classroom, the teacher's central task is to give the subject itself an independent voice. "When the 'great thing' speaks for itself, teachers and students are more likely to come into a genuine learning community, a community that does not collapse into the egos of students or teacher but knows itself accountable to the subject at its core" (p. 120). The second is technology presence (hybrid thinking). As digitally enhanced participants in andragogy, the teacher and students in an adult online college class can connect and integrate the conceptual realities residing in not only their biological brains but also in their "cloud-based," digital brain extensions, agents, and data stores (Kurzweil, 2014) (see Figure 5).

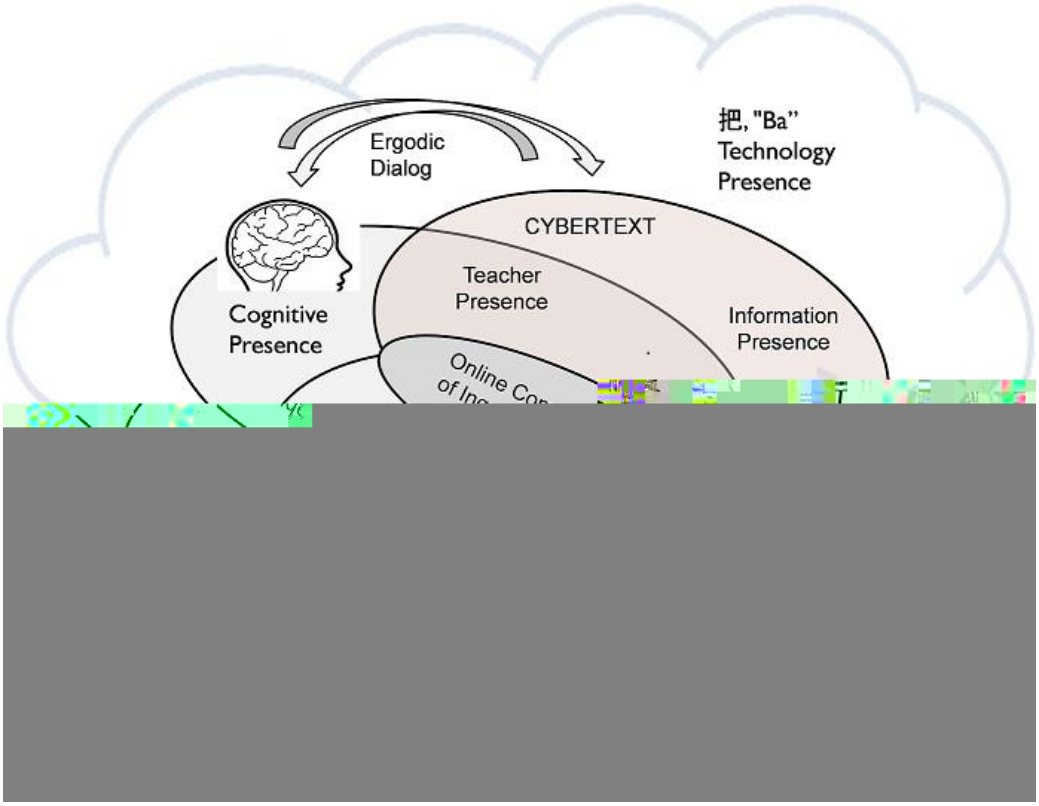

Figure 5. An extended community of inquiry framework for online education.

Information Presence (Ergodic Dialog)

Palmer (2010) described an ideal learning community as a community of truth. In a subject-centered classroom, the teacher's central task is to give the subject itself an independent voice—a capacity to speak its truth quite apart from the teacher's voice in terms that students can hear and understand. "When the great thing speaks for itself, teachers and students are more likely to come into a genuine learning community, a community that does not collapse into the egos of students or teacher but knows itself accountable to the subject at its core" (p. 120).

The "great thing" at the heart of an adult online community of inquiry is both the goal and the path toward the goal. The great thing in the middle of topic centered online education is not a collection of facts, or a store of static knowledge, or some set of skills. It is a dynamic,

evolving concentration of shared meaning. The great thing at the center is more than simply knowledge transferred from the brain of the teacher to the brains of the students. It is also more than knowledge generated and transferred by and to the students. As digitally enhanced participants in andragogy, the teacher and students can connect and integrate the conceptual realities residing in not only their biological brains but also in their cloud-based, digital, brain extensions, agents, and data stores. The memories, memes, biases, values, assumptions, images, sounds, sensations, and sentiments they share and discuss can coalesce into a newly born instantiation of the great thing at the center of their class. Sentience is not simply self-awareness. Sentience is also the emergence of intentionality. Sentience is an integral condition of Information's being. Instances of sentience constantly evolve wherever information is perceived and integrated with experience. In an allusion to a Biblical creation story, Gleick (2011) makes the observation that, although information has always existed, the "word" came later.

> The transition was achieved by the information itself, surviving and perpetuating its kind and selectively exploiting organisms . . . Most of the biosphere cannot see the infosphere; it is invisible, a parallel universe. . . We humans, alone among the earth's organic creatures, live in both worlds at once. It is as though, having long coexisted with the unseen, we have begun to develop the needed extrasensory perception. We are aware of the many species of information… We keep them alive in air-conditioned server farms, but we cannot own them. When a jingle lingers in our ears, or a fad turns fashion upside down, or a hoax dominates the global chatter for months and vanishes as swiftly as it came, who is master and who is slave?" (p. 322)

The World Wide Web is a virtually infinite network of labyrinths through which learners can navigate. It responds to their inquiries and choices, transaction by transaction, by altering the direction and possible destinations of their knowledge-seeking journeys. This sentient and intentional participation in dialog on the part of Information in and with technology is easily observable. When Google corrects a user's misspellings, searches for more likely correct alternative terms, or adjusts the user's search to yield results that include attractive, prior activity

based, offers to sell products and services, it demonstrates its loyalty to its true masters, the people who pay for its services, the corporate entities engaging in Internet commerce. The concept of cybertext focuses on the mechanical organization of the text, by positing the intricacies of the medium as an integral part of the literary exchange. The work of a textbook reader takes place mostly in his head. However, "the user of cybertext also performs in an extranoematic sense. During the cybertextual process, the user will have effectuated a semiotic sequence," by constructing a "choice by choice" path toward his ultimate goal, this selective movement is a work of physical construction that the various concepts of "reading" do not account for (Aarseth, 1997, p. 1).

According to Aarseth (1997) ergodic is a term appropriated from physics that derives from the Greek words *ergon* and *hodos*, meaning work and path.

> In ergodic literature, nontrivial effort is required to allow the reader to traverse the text. If ergodic literature is to make sense as a concept, there must also be nonergodic literature, where the effort to traverse the text is trivial, with no extranoematic responsibilities placed on the reader except (for example) eye movement and the periodic or arbitrary turning of pages. (1997, p. 2)

Online education contexts (hypertext, cyber multi-media, and software application systems) are ergodic literature. An exciting prospect of today's computer-mediated adult online educational environments is their potential to move beyond the traditional paradigm of "a teacher and students exchanging information for books" to allow the consciousness and intelligence present in the information to inform the cognitive development of all of the participants through not only their physical biological, but also their technical digital consciousness.

Technology Presence (Hybrid Thinking and Personalized Learning)

Distance education practice and technology have evolved through five generations in their 150 years of existence (Taylor, 2001). For most of this time, distance education was an

individual pursuit defined by infrequent postal communication between student and teacher in a "correspondence class." The last half of the 20th century witnessed rapidly accelerating development and the emergence of three additional generations of distance learning, one supported by the mass media of television and radio, the next by the synchronous tools of video and audio teleconferencing, and yet another based on Internet based computer applications for online learning. The first part of the 21st century has produced the first visions of a fifth generation, based on autonomous agents, intelligent software infrastructure and database-assisted learning, an educational semantic web (Anderson & Elloumi, 2008).

MOOCs are incorporating technological eLearning infrastructure that provides online videos of real-life lectures, providing distance learners access to the highest quality educational content. Harvard and other world famous universities, such as MIT, Caltech, Berkeley, and Princeton have led the way in this implementation. Early MOOCs have been mostly offered as non-credit courses. However, since they require the presence of an instructor, the use of technology, and are frequently enriched with webinars, discussions, wikis, etc., it seems likely that MOOCs will eventually stop being a free service. "All this will also lead to the necessity of official grades, as well as credits that can also be transferred from one school to another" (Pappas, 2013, p. 1). Even so, the cost for students might be drastically reduced. In 2014 Georgia Tech offered the first professional Online Master of Science degree in computer science (OMS CS) that can be earned completely through the "massive online" format for less than $7,000 in tuition cost (Georgia Tech, 2013).

The technologies present in the educational semantic web have the potential to support the growing influence of learning communities. These multifaceted associations jointly developing and sharing course content, may extend classroom practice, enhance curriculum, and

positively influence the experiences of students, teachers, and administrators. These virtual communities may "support learning, promote collective creativity and shared leadership, and unite learning groups with shared values, vision, and practices in a global perspective" (Pappas, 2013, p. 1).

The recent development of mobile devices, such as smartphones and tablets, which are equipped with digital positioning, dual cameras, high quality audio, and high definition video, coupled with their complete handheld mobility might lead to a new mLearning paradigm. It could be a bring your own device (BYOD) framework where the applications are stored locally and user data can be stored on the device, in the cloud, or in both. Providers will be able to offer cloud-stored individual eLearning modules, or even full eLearning courses that can accessed globally on demand. Software as a Service (SaaS), in which applications are developed and hosted by a vendor or service provider and made available to customers over the Internet can reduce development and maintenance cost while providing very high system reliability (Pappas, 2013, p. 1). Gartner group (2013) predicts that improved JavaScript performance will begin to push HTML5 as a mainstream application development environment and mobile Apps will replace many applications running on personal computers.

Gamification, a highly popular aspect of mobile technology, has great potential for distance learning. Game play develops student/learner skills, enhances problem-solving, and student engagement. New technologies supporting augmented reality, such as Google Glass, and virtual reality, such as Oculus Rift, will likely become affordable tools in an online learning context. Gesture-based user interfaces and computer generated image technology can be combined to create immersive and compelling course content. Supernormal reality, not bound by the physical constraints of the natural world, has the potential to catalyze learning experiences.

The ability of technology to sense and respond intentionally to users supports its position as an active presence in the online learning environment. In distance education, as in other business sectors technology's influence is increasing, "The next evolution in user experience will be to leverage intent, inferred from emotion and actions, to motivate changes in end-user behavior" (Gartner, 2013, p. 1).

As digitally enhanced participants in andragogy, the teacher and students can connect and integrate the conceptual realities residing in not only their biological brains but also in their "cloud-based," digital, brain extensions (agents and memories). The memories, memes, biases, values, assumptions, images, sounds, feelings, and sentiments they share coalesce into a newly born instantiation of the topic at the center of their class. Because it eliminates barriers to student participation such as distance and scheduling, computer-mediated education technology has the capacity to disrupt the traditional business model of institutions of higher learning. Even though most higher education institutions now have some form of online course delivery and most students will take some form of online course, the traditional aspects of college education still predominate in many computer mediated classrooms.

Organizational cost structures and pricing models are all subject to change as a major portion of adult college student enrollment shifts to online courses. According to Christensen and Raynor (2003), disruptive technologies begin as lower performance products with certain new capabilities that are beneficial to a subgroup of customers or potential customers because they eliminate an inconvenience, perform additional functions, or increase value of the product. Instead of challenging the status quo head-on, disruptive innovations take root and grow outside the purview of the incumbent system. They originate outside the mainstream and then improve independently over time until they begin to draw people away from the status quo. At that point,

policies shift naturally to accommodate the highly sought after disruptive technologies. Disruptive innovation can circumvent the political barriers that have historically been inimical to radical innovation. Online technology in adult college education is such a disruptive innovation.

An education system tailored to each individual student's learning needs has historically been too expensive to provide. Instead, a factory-based model of education has been used to achieve economies of scale by processing students in batches along a fixed schedule. Now, however, computer-based technologies are making personalized learning an achievable reality. Personal tutelage is an educational paradigm that has existed for centuries, but it has historically only been available to the wealthy elite (Arnett, 2014). However, computer aided learning and the Internet are making personalized learning accessible and affordable to anyone. These disruptive technologies are amplifying the capabilities of great instructors so that their expertise can be made available to any student. It is yet to be determined, however, whether emergent technology supported innovations such as MOOCs and Competency-Based degree programs will be generally adopted as standard practice in the online education business sector. Personalized-learning technologies need not initially emerge in a form that is better in every way than existing systems. "The process of disruptive innovation allows them to take root outside of the traditional system and then improve over time until their value is universally acknowledged and widely adopted" (Arnett, 2014, n.p.). Online learning is a technology that can potentially make truly personalized learning possible, and disruptive innovation is the economic process that may allow the online technology to fulfill its promise.

Literature Related to Research Method

Historically, social research methodologists have described three major purposes for research: "to explore, to explain, or to describe a phenomenon. Synonyms for these terms could

include understand, develop, or discover" (Marshall & Rossman, 2010, p. 68). Many qualitative studies are descriptive and exploratory. They build rich descriptions of complex circumstances that are unexplored in the literature. A descriptive and exploratory qualitative research methodology will be used for this study. Qualitative research is the most appropriate approach for this study because the purpose is to explore ways that Adult Online Higher Education Honor Students perceive and react to current online learning environments and technologies.

According to Kirk and Miller (1986), qualitative research fundamentality depends on watching people and describing them on their own terms. A "quality" connotes the nature, as opposed to the "quantity," or amount, of a thing. Therefore, qualitative research would denote any research distinguished by the absence of counting. "To identify something, the observer must know what qualifies as that thing, or that kind of thing" (p. 9). In this study, the complexity of defining a set of criteria for determining success in adult online college education support a combined exploratory and constructivist epistemological approach through a combination of purposeful selection, interviews, and multiple-case study of AOCH students.

The rigor inherent in qualitative research methodology determines the reliability of the results (Morse et al., 2002). However, Guba and Lincoln (1982) defined reliability and validity in qualitative research in terms of trustworthiness containing four aspects: credibility, transferability, dependability, and conformability. Within these are specific methodological strategies for demonstrating qualitative rigor, such as the audit trail, member checks when coding, categorizing, or confirming results with participants, peer debriefing, negative case analysis, structural corroboration, and referential material adequacy (Guba & Lincoln, 1982). Later, Guba and Lincoln also developed authenticity criteria that were unique to constructivist

assumptions and that could be used to evaluate the quality of the research beyond the methodological dimensions (Guba & Lincoln, 1989).

One qualitative research methodology that could be applied to this study is phenomenology. Phenomenology offers a field of scientific investigation that was previously prohibited in empirical methodology. Rather than trying to discern what causal relations pertain to observable physical objects, Phenomenology is an attempt "to focus on the world as given in experience, and to describe it with unprecedented care, rigor, subtlety, and completeness" (Detmer, 2013, p. 1). Phenomenological investigation applies not only to the objects of sensory experience, but to all phenomena: moral, aesthetic, political, mathematical, absent or present, along with the acts of consciousness which disclose them. A fundamental challenge in to the validity of phenomenological research is the threat that the experiences and past life of the researcher will influence his/her interpretation of the subjects' accounts of their experiences. The methodological defense to this threat is "bracketing" a researcher's awareness of his or her own experiences and the units of meaning identified by research respondents. They are kept apart from or held in suspension by the methodological practice of epoché. When the items held in epoché are assessed for any synthesis with the flagged data items collected from the respondents, the two states are taken through a reintegration (Bednall, 2006). While a phenomenological study can produce a rich description of experience, it stops short of creating hypothetical models of the phenomena studied and therefore does not support the creation of predictive theory. Without the construction of theory, questions are left unanswered, solutions are not proposed, and positive progress is unsupported.

Because the researcher desires to find and recommend improvements to the AOCHS experience, grounded theory methodology is potentially useful. Grounded theory methods

provide a set of strategies for conducting rigorous qualitative research (Charmaz, 1996). They are a logically consistent set of data collection and analytic procedures aimed to develop theory. Grounded theory methods consist of a set of inductive strategies for analyzing data. The researcher starts with individual cases, incidents or experiences and develops progressively more abstract conceptual categories to synthesize, to explain and to understand the data and to identify patterned relationships in it. After selecting an area to study, the researcher builds a theoretical analysis based on what is discovered that is relevant in the actual worlds being studied. Grounded theory methods provide systematic procedures for shaping and handling rich qualitative materials, although they may also be applied to quantitative data (1996, p. 28).

"A grounded theory analysis starts with data and remains close to the data. Levels of abstraction are built directly upon the data and are checked and refined by gathering further data In this way, grounded theory studies yield dense conceptual analyses of empirical problems and worlds" (Glaser & Strauss, 1967, p. 27). Grounded theory methods blur the boundaries between data collection and data analysis phases of research. A major contribution of grounded theory methods is that they provide rigorous procedures for researchers to test, refine, and develop their ideas and intuitions about the data. Grounded theory methods explicitly unite the research process with theoretical development. In this way, grounded theory methods undermine definitions of qualitative analysis as only intuitive and impressionistic and of quantitative analysis as exclusively rigorous and systematic (Charmaz, 1996). Grounded theory methods enable the researcher to make conceptual sense of large amounts of data. Grounded theory methods are suitable for studying individual processes, interpersonal relations and the reciprocal effects between individuals and larger social processes, such as adult online college education. These methods are especially "useful for studying typical social psychological topics such as

motivation, personal experience, emotions, identity, attraction, prejudice and interpersonal co-operation and conflict" (1996, p. 29).

Yin (1984) defined the case study research method as "an empirical inquiry that investigates a contemporary phenomenon in its real life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (p. 23). According to Yin (2014), a case study design should be considered when: a. the focus of the study is to answer "how" and "why" questions; b. the researcher cannot manipulate the behavior of those involved in the study; c. the researcher wants to cover contextual conditions because "they are relevant to the phenomenon under study"; or d. "the boundaries are not clear between the phenomenon and context" (p. 23). In this study, the researcher has no control over the attitudes or behavior of the students in the study population and the online education context is tightly interrelated with the students' successful experience, therefore the use of a case study was one type of research method was selected.

Case study is recognized as one of the primary methodological traditions in qualitative research (Creswell & Plano Clark, 2007). Researchers have utilized this approach effectively and productively in many business and employment contexts (Myers, 2009). While many case studies involve objects of research such as organizations or programs, persons can also constitute cases, a common scenario in clinical practice fields such as medicine and psychology (Yin, 2008). Study of complex phenomena in dynamic contexts requires research methods capable of managing ambiguity and discerning meanings to make valuable and trustworthy contributions to knowledge and practice. Qualitative case study methodology is therefore well suited to the requirements and goals of this study.

Myers (2009) described three philosophical perspectives or orientations in qualitative research: positivist, interpretive, and critical. In positivist research, commonly used in organizational research, propositions about a phenomenon in terms of dependent and independent variables are examined based on an assumption that reality is essentially objective and has measurable properties. Critical researchers view reality in terms of the influences of power, beliefs, and social values on behavior, and actively seek to initiate progressive action. Interpretive researchers, in contrast, do not presume that reality is static and readily measurable, or that they can develop a point of view to advocate for a specific change in the status quo. They approach complex, dynamic realities with an appreciation for their deeply context-driven and emergent meanings, and consider these meanings relevant because they are inseparable from the experience of their research subjects. Interpretive qualitative research is conducted to increase understanding by reliably discerning meanings and drawing conclusions about subjects of interest that are valid, in part, because the context in which they occur has high validity (Myers, 2009). The exploratory researcher marks characteristics relevant to a topic of interest and describes those that are not well understood, thus preparing the way for future researchers (Myers, 2009) and helping others develop a roadmap for future research efforts (Leedy & Ormrod, 2012).

Potential threats to the validity of this research might be unforeseen motivations by the research subjects to misrepresent or withhold information from the researcher, researcher biases due to his own personal experience of the phenomena being studied or unique characteristics of the adult online college educational environment in the institution in which this study will be conducted. Even if these factors negatively affect the generalizability of the results of this study, it can still contribute value as a descriptive interpretation of phenomena from one researcher's

unique qualitative point of view. Even if generalization is limited, a study can add to the body of knowledge with nonrandomized, irreproducible observations, if those observations provide useful information about a phenomenon of interest (Flyvbjerg, 2012).

The research questions that guided this study are as follows:

1. How do adult online college honor students experience deep and meaningful learning in online classes?
2. How do adult online college honor students achieve critical engagement in their classes?
3. How do adult online college honor students use information technology in their online classes for learning?
4. How do adult online college honor students use information technology outside of their online classes for learning?
5. What improvements in adult online college class technology would adult online college honor students suggest?

An extensive review of related literature, responses to a Google forms online questionnaire, and data from multiple in-depth telephone interviews were used in this study to facilitate credibility and trustworthiness. This process of triangulation by seeking corroboration through evidence from multiple sources is helpful in improving understanding of how things work in the particular context of a subject of interest. Findings and conclusions accompanied by robust triangulation are more reliable than isolated observations or assertions. They provide a higher standard of confidence that the researcher is accurately reporting findings in their full real and contextual complexity (Stake, 2010).

The goal of this study was to explore the lived experience of honor students in adult online college education classes. The adult online college educational experience was investigated using thematic analysis and multiple case study methodology with special focus on honor students' processes of engagement with the technology supporting the generation of knowledge and cognitive development. Publically available statistical data related to adult online education was also incorporated into the analysis when it was applicable. The researcher employed Internet search technology to locate and analyze peer-reviewed journals, industry reports, and other relevant web content concerning online college academic success. Randomly selected adult online college students on the current academic honors list were invited to respond to an online Google forms questionnaire of open-ended questions concerning the factors that support their success in online classes.

In addition to the online questionnaire, a purposeful sample of students was selected for participation in follow up telephone interviews exploring in detail their adult online college education experiences. Interview participants who represented four significant demographic phenotypes (adult online college market segments) were asked to describe the behaviors and attitudes that contributed to their successful academic experience. They were also requested to explain how the influence of instructors and fellow students affected them in their studies, and how they interacted with the technology infrastructure of online classes. In addition, they were given the opportunity at each stage of the interview to freely express anything they feel is important in the context of the interview topic. Relevant areas of inquiry addressed in the interview protocol questions included deep and meaningful learning, cognitive engagement, and use of technology, both in online class and outside class, real life contexts.

Qualitative analysis of the Google forms online questionnaire responses and interview transcripts employing multiple case study methodology and using thematic coding and analytic induction were used to answer the research questions and form the basis for recommendations for practice and future research. The online questionnaire responses were coded and analyzed in accordance with methodological strategies suggested by Guba and Lincoln (1982), and a set of positive conclusions and recommendations were developed for further research and potential practical actions that might help a large portion of adult online college students to achieve greater academic success.

Summary

This chapter has presented a comprehensive review of the literature related to adult online college education. There is a gap in the current literature concerning how the technology and virtual context of adult online college education is perceived, interpreted, and employed by the most successful students in undergraduate online college degree programs. The researcher hopes to contribute to the available knowledge pertaining to the factors supporting adult online college success. By gathering first person reports and observations of the challenges and advantages presented by online classes, innovations may be identified that might improve student-learning outcomes and enhance the academic success of all adult online college students. These innovations in the technologies and applications, when employed in adult online college education may potentially enhance the learning outcomes and improve the well-being of adult online college students in the future.

In this review, the theoretical foundations of pedagogical practices in adult online education were presented in the historical context of the evolution of the knowledge worker and the global information economy (Drucker, 1989). The adult online college education

environment was analyzed as an enabling context for knowledge generation (Nonaka & Toyama, 2003), and test fitted against principles of TQM based on a system of profound knowledge for management (Deming, 2000). The CoI model (Garrison et al., 2000) for online learning was employed as a theoretical framework and as a facilitating structure for the development of an information-based, topic-centered paradigm for adult online college classes (Palmer, 2010). In addition, computer assisted online education was proposed as a disruptive technology that might potentially change both the pedagogical practice and business model of adult online education (Christensen & Raynor, 2003).

The next chapter describes the qualitative methodology used in this study, including why it was selected. The target population, sampling methodology, and sampling procedures are also described, along with all survey instruments and data collection tools used in the study. Next, the steps taken to ensure the quality of evidence are presented, including measures to demonstrate trustworthiness, dependability, and transferability. Specific data collection procedures, characteristics of collected data, and the methods of data analysis are described. Both statistical and nonstatistical procedures used by the researcher are declared and defended. Also, the software tools and programs used for data analysis and methods for displaying results are described. Any possible bias of the researcher related to the study or its participants is discussed, and the measures taken to control biases are indicated. Finally, the steps taken to protect the rights of human participants, including informed consent, confidentiality of information, and safeguarding the data are described.

CHAPTER THREE

METHODOLOGY

Adult online college education presents unique opportunities to employ technical capabilities to enable deep and meaningful learning. The purpose of this study was to explore the experiences of adult online college honor students, in order to identify important factors supporting honor students' use of technology in the online learning environment. The potential benefits from this exploration are the discovery of opportunities to exploit new technical learning capabilities and to enable deep and meaningful online learning for more of the students participating in adult online college environments.

Research Design

A qualitative multiple case study approach was used in this study of AOCHS experience. Drawing upon his experience as an adult online college honor student, the researcher constructed an a priori framework of areas of inquiry for use in an online questionnaire (see Appendix E) that was sent to adult online college honor students at a large Midwestern U.S. college. The students were asked to describe their lived experiences with success in online college education and the meanings they assign to these experiences. Based on qualitative analysis of their responses, a purposefully selected sample of students was chosen for in-depth interviews (see Appendix J). The goal of the purposeful selection process was to obtain a heterogeneous mix of interview subjects based on self-reported demographics, employment experience, and academic goals corresponding to four common AOCHS phenotypes (adult online college student market segments).

Interview transcriptions were comprehensively analyzed using phenomenological multiple case study methodology to construct a rich description of the experience of AOCHS

success. Multiple case study research is the most appropriate approach because the purpose of this study is to explore ways in which the adult online college education environment affects the perspectives, motivations, and practices of honor students while they are experiencing online learning technology's effects.

The research questions that guided this study are as follows:

1. How do adult online college honor students experience deep and meaningful learning in online classes?
2. How do adult online college honor students achieve critical engagement in their classes?
3. How do adult online college honor students use information technology in their online classes for learning?
4. How do adult online college honor students use information technology outside of their online classes for learning?
5. What improvements in adult online college class technology would adult online college honor students suggest?

Yin (2014) defined the case study research method as "an empirical inquiry that investigates a contemporary phenomenon (the "case") in depth and in its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident" (p. 16). According to Yin (2011), "case study research assumes that examining the context and other complex conditions related to the case(s) being studied are integral to understanding the case(s)" (2011, p. 4). In this study, the online education environment was the primary factor influencing the attitudes and academic behavior of the students in the study population and the online education context was tightly interrelated with the students' successful experience.

Therefore, the use of a case study methodology over other types of research methods was selected.

According to Garrison, Anderson and Archer (2000) student participation in a community of inquiry is a valuable process for cognitive development because the student's participation supports his or her future success in the workplace, where collaboration skills are highly valued. The adult online college educational experience was investigated, with special focus on honor students' processes of engagement with teachers, classmates, and the technology supporting the generation of knowledge and cognitive development. Randomly selected adult students on the current academic honors list were invited to respond to an online Google forms questionnaire of open-ended questions, providing detailed information concerning the factors that support their success in online classes. Based on responses to the online questionnaire, a purposeful sample of students was selected for participation in follow-up telephone interviews exploring in detail their adult online college education experiences. Questionnaire responses were analyzed using thematic coding and analytic induction, and interview transcriptions were analyzed using phenomenological case study methodology to answer the research questions and provide rich, detailed descriptions of the lived experiences of adult online college honor students.

Target Population

The total population for this study was a group of adult online college honor students (older than 24 years of age) who were enrolled in one or more online undergraduate college classes provided by a Midwestern U.S. college during the 2014 academic year (see Figure 6).

Sampling Procedure

The approach to qualitative research is naturalistic. The researcher studies real people in natural settings rather than in artificial isolation. Therefore, sampling should take into account

not only the subject's individual characteristics but also temporal, spatial, and situational influences. Marshall (1996) described three broad categories of naturalistic sampling for qualitative research: convenience, judgment, and theoretical sampling. Convenience sampling, simply selecting the most accessible subjects in a population, is the least rigorous technique. It lacks scientific rigor and may result in poor results. "There is an element of convenience sampling in many qualitative studies, but a more thoughtful approach to the selection of a sample is usually justified" (Marshall, 1996, p 523).

According to Marshall (1996), judgment sampling, or purposeful sampling, is the most common sampling technique in qualitative research. The researcher actively selects the most productive sample to answer the research question. This will involve "developing a framework of the variables that might influence an individual's contribution and will be based on the researcher's practical knowledge of the research area, the available literature and evidence from the study itself" (Marshall, 1996, p. 523). Purposeful sampling considers factors such as demographics as well as self-reported characteristics such as attitudes or values. Theoretical samples, such as maximum variation samples, deviant samples, or critical case samples can be used to explore emerging concepts during data analysis.

In order to design the sampling methodology for this study, the researcher used his own direct experience to construct a composite model of characteristics that might influence the experience of AOCHS success. This model comprised student *phenotypes* representing various common adult online college market segments. The term phenotype, introduced by the Danish botanist Wilhelm Johannsen in 1909,"is derived from Greek *phain-omai*, to appear, and *typos*, an imprint. The phenotype is not to be understood as the organism itself, but as its abstract appearance or description as you can see, measure and remember it" (Wanscher, 1975, p. 126).

Phenotype refers to the observable characteristics of an individual resulting from the interaction of its genetic makeup with its environment (demographics and experiences).

An email invitation to participate in the study was sent to 500 randomly selected online undergraduate honor students over 24 years of age at a mid-western U.S. online college. They were invited to respond to a Google forms-based online questionnaire that consisted of eight open-ended questions regarding the underlying perspectives, motivations, and practices that have resulted in their success as adult online college honor students (see Appendix E). Student identity verification, access control, and data summarization were done using built-in Google forms capabilities. Subjects were limited to one response but could edit their own response if desired. Since the email invitation list comprised 500 positively motivated and academically successful students, it was anticipated that more than 10% of the invitees might agree to complete the survey. 93 responses were received. (See Figure 6). Using the responses the Google forms online questionnaire, a small purposeful sample of AOCH students was selected for voluntary participation in semi-structured in-depth follow-up interviews regarding their lived experience as successful adult online college honor students.

The researcher conducted detailed interviews with 4 volunteer questionnaire respondents, using a judgment sample framework including variables such as age group, employment experience, and educational goal. The goal of the purposeful selection process was to obtain a heterogeneous mix of interview subjects based on self-reported demographics, employment experience, and academic goal corresponding to four common AOCHS phenotypes: early career, technical degree seeker, midcareer business degree seeker, early career post baccalaureate certification seeker, and late career baccalaureate and subsequent graduate degree seeker.

The questionnaire response data were analyzed through descriptive and axial coding, an interpretative conceptual framework was constructed, and the sampling strategy for follow-up interviews was theoretical. Based on the percentage of source coding coverage and thematic coding density documented for the case study source files in the analytical software tool used by the researcher (NVivo 10 for Windows, see Table 4), thematic and theoretical saturation were attained.

Description of Sample

The sample of 93 questionnaire respondents was large enough to be representative of most students' varying study-related characteristics and life experiences, yet small enough to keep data analysis manageable. If fewer than 50 subjects had agreed to participate, the researcher had planned to enlist the assistance of the faculty to help to recruit additional subjects for this study. The number of follow-up interviews depended on how many were required to completely explore emerging themes and fully answer the research questions. The multiple case study sample included four voluntary participants from among the 93 students responding to the online questionnaire. The researcher conducted follow-up interviews using a theoretical sample methodology based on criteria such as age group, employment experience, and educational goal. The goal of the purposeful selection process was to obtain a heterogeneous mix of interview subjects based on self-reported demographics and life experience corresponding to four common AOCHS phenotypes: early career, technical degree seeker, midcareer business degree seeker, early career post baccalaureate certification seeker, and late career baccalaureate and subsequent graduate degree seeker. The study sample participants were interviewed in detail about their experiences in the adult online college program, and the meaning they associate with these experiences (See Figure 6).

ADULT ONLINE COLLEGE HONOR STUDENT (AOCHS) STUDY METHODOLOGY

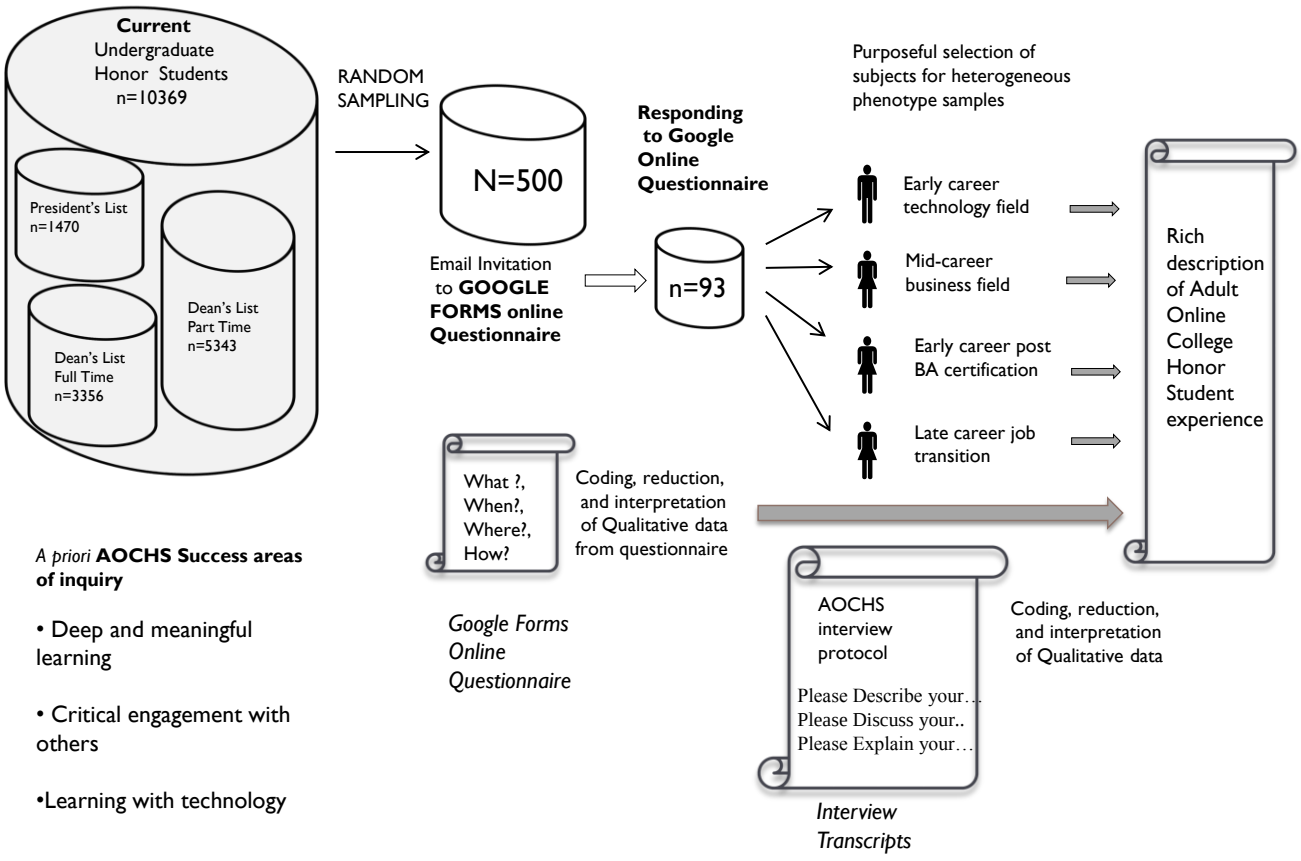

Figure 6. Adult online college Honor Student study methodology.

Treatment

After receiving approval from the Baker College Institutional Review Board (IRB) for research on human subjects, the researcher sent solicitation emails to 500 randomly selected students from the 10,369 students whose names were included on the winter 2014 academic honors lists (President's list, Dean's list for fulltime students, or Dean's list for part-time students). All case participants had previously been enrolled in at least one online undergraduate course at Baker College during the winter 2013 academic quarter.

To maximize the participation rate, common marketing strategies were used to increase the persuasive influence of the invitation email. Cialdini (1987) suggested six major techniques

for getting people to say "yes." Compliance professionals are knowledgeable about automatic influence and employ it regularly and expertly to achieve compliance and prompt cooperation. They structure their requests to exploit factors of influence that exist in most common social environments. To do this, they carefully choose words that initiate automatic behaviors in most persons.

Cialdini compiled six key principles of persuasion:

Reciprocity. People should try to repay, in kind, what another person has provided to them. By virtue of the reciprocity rule, then, people are obligated to the future repayment of favors, gifts, invitations, and the like.

Consistency and commitment. There is a nearly obsessive desire to be (and to appear) consistent with what one has already done.

Social proof. When many people are doing something, it is the right thing to do.

Liking. People most prefer to say yes to the requests of someone they know and like.

Authority. Information from a recognized authority provide a valuable shortcut for deciding how to act in a situation.

Scarcity. People are more motivated by the prospect of losing something than by the thought of gaining something of equal value.

Applying these principles, the researcher produced an invitation email for the AOCHS study (see Appendix D). A total of 93 of the 500 adult online college students contacted agreed to participate and followed the uniform resource locator (URL) link embedded in the email to a questionnaire located on the Baker College intranet infrastructure (see Appendix E). The online form was scripted to include identity verification through student login and to enforce a "one response only per person" rule. After accepting the terms of participation in the

study and entering simple demographic information, the participants responded to eight open-ended survey questions concerning their experiences as academically successful online college students. In addition to these questions, the form also contained an additional question asking whether the responder would agree to participate in a telephone follow-up interview regarding their responses to the questionnaire. Of the 93 students responding, 41 answered "yes" to a possible follow-up interview. The researcher subsequently invited them by email to schedule an interview during the next 2 weeks. The follow-up interview invitations included a link to the detailed common Baker College informed consent form (see Appendix I). After reviewing and accepting the terms of informed consent, four of the students who responded to the questionnaire participated in a recorded follow-up telephone interview with the researcher. Each of these interviewees was representative of a different phenotypical market segment in the adult online higher education student population based on his or her individual characteristics and educational aspirations. Transcripts of these interviews are included in the case study data base (CSDb) (see Appendix L).

Instrumentation

The purpose of this study was to explore the experiences of adult online college honor students, in order to identify ways in which technology affects students in the online learning environment. Participants responded to a Google forms based questionnaire consisting of 8 open-ended questions regarding the underlying perspectives, motivations, and practices that have resulted in their success as adult online college honor students. The online survey was developed with the support of a committee of faculty members who evaluated the questions for clarity and redundancy. They also assessed each question's validity based on its representation of the construct it was purported to measure. Selection of participants for in-depth follow-up interviews

was based on their responses to this online questionnaire. The sampling process purposefully selected a heterogeneous group of interviewees in order to ensure the most comprehensive study findings possible.

The AOCH Student Interview Protocol was a structured interview protocol prepared by the researcher to gather rich and detailed qualitative data related to the experience of adult online college honor students (see Appendix J). The questions are intended to elicit descriptions of the students' perspectives, motivations, and practices that can be applied toward the development of a rich description of their academic experiences. Parts of this interview format were based on the CoI theoretical model of online learning. The term community of inquiry was used by Lipman (1991) to refer to a teacher-facilitated critical learning community where "students listen to one another with respect, build on one another's ideas, challenge one another to supply reasons for otherwise unsupported opinions, assist each other in drawing inferences from what has been said, and seek to identify one another's assumptions" (Lipman, 1991, p. 15). According to Garrison, Anderson, and Archer (2000), student participation in a community of inquiry (see Figure 4) is a valuable process for cognitive development because the student's participation supports his or her future success in the workplace where collaboration skills are highly valued.

A community of inquiry in the context of adult online college education operates in the following three dimensions:

Cognitive presence: "the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication" (Garrison et al., 2000, p. 89). Garrison, Anderson, and Archer (2001) suggested that measures of cognitive presence are "a means to assess the systematic progression of thinking over time" (p. 11).

Social presence: “the ability of participants in a community of inquiry to project themselves socially and emotionally, as “real" people (i.e., their full personality), through the medium of communication being used.” (Garrison et al., 2000, p. 94).

Teacher presence: timely, encouraging, individualized feedback from an online instructor. (Ke, 2010).

Case study participants were asked in semi structured interviews to recall their successful experiences as AOCHS and to describe the behaviors and attitudes that led to their success (See Appendix J). They were also requested to explain how the influence of instructors and fellow students affected them in their studies, and how they interacted with the technology infrastructure of online classes. In addition, they were also given the opportunity at each stage of the interview to discuss anything they felt was important in the context of the interview topic, which included self-awareness, resourcefulness in the use of technology, interaction with instructors, interaction with classmates, satisfaction with the program of study, and perceived value of the knowledge and skills obtained. Specific areas of inquiry included deep and meaningful learning, cognitive engagement, and use of technology, both in online class and real-life contexts.

A field test of the interview protocol was conducted employing two volunteers selected from the researcher’s classmates in the online graduate department of business administration to ensure that the questions were clear, answerable, and inoffensive. The responses of the volunteers in the pilot test were also reviewed by the researcher to uncover any possible issues negatively affecting validity or reliability in the instrument. The interview protocol was also evaluated by a committee of college faculty members for possible issues negatively affecting clarity or redundancy. They assessed each question’s validity based on its representation of the

research topic it was purported to measure. The researcher's analysis of the, online questionnaire responses, interview data and current literature related the research questions data formed the basis for a set of conclusions and recommendations for future research.

Quality of Evidence

The methods used to determine the quality of evidence depend on the mode of research undertaken. Qualitative research is grounded in the sociological tradition and rests on the interpretation of phenomena and experience. Its purpose is to discover underlying patterns and meanings. To be of high quality, the interpretations must be free of bias (trustworthy or credible), confirmable by others (dependable), and applicable to similar situations (transferable).

In this study, the researcher sought to generate meaningful knowledge through a systematic attempt to interpret self-reports of successful academic performance by AOCHS. The goal was to interpret the meaning and significance of participant experiences in a way that others in similar situations will learn and benefit from them. Engaging in research to elicit lessons learned from experience is an essentially interpretive activity (Bloomberg & Volpe, 2008).

An online questionnaire, telephone interviews, literature review, and the researcher's personal experience were used in this study to facilitate credibility and trustworthiness. This process of triangulation by seeking corroboration through evidence from multiple sources is helpful in improving understanding of how things work in the particular context of a subject of interest. Findings and conclusions accompanied by robust triangulation are more reliable than isolated observations or assertions. They meet a higher standard of confidence that the researcher is accurately reporting findings in their real contextual complexity (Stake, 2010).

Questionnaire responses were coded and analyzed in accordance with methodological strategies suggested by Guba and Lincoln (1982), using NVivo 10 Windows-based qualitative

data analysis software from QSR International Pty Ltd. Thematic coding and analytic induction and interview transcript analysis employing multiple case study methodology were used to answer the research questions and form the basis for recommendations for future research and practice.

In addition to the methodological threats to validity discussed above, other potential threats to the validity of this research might be unforeseen motivations by the research subjects to misrepresent or withhold information from the researcher, researcher biases due to his own personal experience of the phenomena being studied, or unique characteristics of the adult online college educational environment in the institution in which this study was conducted. Even if these factors negatively affect the generalizability of the results of this study, it can still contribute value as a descriptive interpretation of phenomena from one researcher's qualitative unique point of view. Even without generalization, a study can add to the body of knowledge even with nonrandomized, irreproducible observations, if those observations provide useful information about a phenomenon of interest (Flyvbjerg, 2012).

The researcher personally conducted the analytical thematic coding of questionnaire responses and conducted the case interviews for this study, and he is aware of his potential bias due to his personal experiences. The researcher sought to minimize any threats to validity or reliability caused by his recent personal experiences as an adult online college honor student and online college instructor by engaging in continual review of his data analysis and data interpretation processes with his dissertation committee chairman. To address the threat of researcher bias prior to beginning the participant interviews, the researcher engaged his dissertation committee chairman to conduct a bracketing interview using the methodology described by Gearing (2008). This procedure allowed the researcher to recognize and

compartmentalize his preconceptions and personal biases, so that findings and conclusions from this research are less likely to be influenced by observer biases.

Data Collection Procedures

Yin (2008) proposed that published case study research should contain enough data so that the reader of the study could draw his or her own conclusions about the results. Collecting data from multiple sources in different forms is an accepted standard for research practice in general, and multiple-case studies in particular, because it supports trustworthiness in findings and conclusions (Fruner, 2013). According to Seidman (1998), "At the root of in-depth interviewing is an interest in understanding the experience of other people and the meaning they make of that experience" (p. 3). The methods of data collection for this study were in-depth follow up interviews of a small, purposefully selected, sample chosen from 93 adult online college honor students who responded to an online survey of their perspectives, motivations, and practices.

Initial Contact

After completing accredited training in social/behavioral research from the Collaborative Institutional Training Initiative (CITI) (see Appendix A), the researcher received formal approval to proceed with this study from the online college president (see Appendix B) and the IRB for social research (see Appendix C). In accordance with the approved study methodology, 500 randomly selected adult students on the current academic honors list at a Midwestern U.S. college were invited by email to respond to an online questionnaire of open-ended questions to provide detailed information concerning the factors that support their success in online classes.

In addition to the online questionnaire, a phenotypically heterogeneous sample of volunteer questionnaire respondents participated in semi-structured telephone interviews exploring in detail their adult online college education experiences.

Interviews

Participants were asked, "Would you agree to participate in a follow up telephone interview to discuss your responses in greater detail?" Those who answered affirmatively were sent an email from the researcher offering to agree upon an interview date and time during the upcoming 2 weeks. In the process of scheduling, each potential interviewee was invited to access an online link to the standard official institutional informed consent form, which indemnified the institution from all responsibility for any physical or mental harm he or she might experience, whether foreseen, unforeseen or unforeseeable (see Appendix I). If the potential interviewee failed to electronically sign indicating his or her agreement to the terms of the study, no interview was conducted. In the end, only 4 of the 41 volunteer questionnaire respondents agreed to the terms of informed consent and participated in in-depth interviews. If a heterogeneous sample had not been obtained, the researcher would have sought institutional approval to contact a newly selected random sample of AOCHS during the subsequent academic quarter. Fortunately, each of the four interview subjects represented a distinct AOCHS phenotype, resulting in a heterogeneous experimental sample for the phenomenological case study analysis.

At the scheduled interview, an in-depth introduction of the study, informed consent, confidentiality, and study risks and benefits were presented by the researcher. The student was interviewed using the "The Assessment of adult online college Honor Student Perspectives, Motivations, and Practices", a semi structured interview format prepared by the researcher to gather qualitative data related to the experience of adult online college honor students (see

Appendix J. The questions were intended to elicit descriptions of the students' perspectives, motivations, and practices that could be applied toward the development of a rich description of the adult online college honor students' experience. Each interview took between 30 and 60 minutes and was conducted in a private conference room by WEBEX conferencing which controlled access and identity verification. Each interview was recorded transcribed by the researched for subsequent analysis. For all interview-based evidence, traceability includes a clear connection from the interview recordings to transcripts and the case study interview protocol.

Yin (2008) suggested that case studies are strengthened when they offer the possibility of allowing subsequent independent researchers to access additional data that were used as the basis for the study but were not included in the published report. He recommended establishing and maintaining a repository of additional data, a collection of notes, documents, tabular materials, and narratives related to the cases studied. Following these guidelines, the researcher has established and maintains a case database (CSDb). All relevant documents and recorded data will be stored digitally at in the researcher's residence. In addition, one backup copy of the study data will also be maintained. This backup database will be secured with a strong encryption algorithm and stored as a directory in the researcher's private online drive in his college's online file directory. The encryption key for the online backup will be kept on disk storage in a separate physical location with no network connectivity. Wherever participant quotes from the online questionnaire or case interviews transcripts are used to support the findings or conclusions of this study, their archival reference source is their corresponding searchable transcript or questionnaire response file in the CSDb (see Appendix L).

Data Analysis Procedures

Online Questionnaire responses were analyzed using “analytic induction” (Znaniecki, 1934). The essence of analytic induction has been used repeatedly throughout history by scientists in the physical sciences. It involves "inducing laws from a deep analysis of experimentally isolated instances" (p. 237). Bogdan and Biklen (1982) emphasize that the initial hypotheses in analytic induction are derived from data, particularly from initial observation and the researcher’s own experience. In subsequent phases of study, the researcher will “make use of purposeful sampling, where specific individuals are selected for inclusion because they are most likely to help broaden the theoretical explanation. The result is the opposite of "funneling"—instead of conclusions becoming more restricted, a more encompassing yet refined theory is produced” (1982, n.p.). The process involves making universal statements that may need to be modified later if exceptions are discovered. A key value of the analytic induction approach is that findings are more likely to be generalizable since numerous examples must be explained through successively qualified versions of the hypotheses. Accommodating the exceptions adds to the base of knowledge as a new, more comprehensive, model of laws of the studied behavior are then generated that account for the exceptions. “Such laws are marked by comprehensiveness and parsimony that bring meaning to the various parts of the whole of a phenomenon” (Znaniecki, 1934, p. 258). This process is valuable for adding to available knowledge and understanding, even though no analysis can be considered final, since reality is "inexhaustible" and constantly changing.

Data Coding Strategy

Richards (2009) described coding as a process of three distinct, progressive stages that organize information and lead to understanding of the meaning of data. This process consists of

descriptive coding that adds information about the cases being studied, topic coding that labels text according to its subject, and analytical coding that discloses the researcher's interpretation and reflection on meaning. Coding of questionnaire responses in this study was accomplished by systematically applying conceptual thematic labels to the collected data. The goal was to develop a coding framework sufficiently flexible to accommodate all salient themes that emerge in the process of data collection.

Data Coding Process

When doing the data analysis, the researcher first used open coding of concepts, defined in memos and diagrams based on his own experience and preliminary literature review of adult online higher education technology and practice. These formed an a priori conceptual model to support his process of interacting with the data. Memos and diagrams serve as more than just summary repositories of data. Writing memos is both a tool for and the process underlying analysis. Producing memos and diagrams requires dialoguing with data and moving the analysis further forward.

The researcher's analysis of the data employed axial coding to locate and link concepts into a thematic framework that give them meaning. This process helped the researcher to understand why the action-interactions were occurring and to understand their real or anticipated consequences. This analysis included making comparisons, asking questions, and suggesting possible relationships between concepts (Corbin & Strauss, 2014). To exercise maximum control over his analysis, the researcher required an efficient system for recording his thought process. Coding memos and diagrams were recording tactics that provided "an ongoing, developmental dialogue between his roles as discoverer and as social analyst" (Schatzman Strauss, 1973, p. 9).

According to Strauss (1987), even when a researcher is working alone on a project, he or she is "engaged in continual internal dialogue for that is, after all, what thinking is" (p. 110).

The coding process for this study began prior to any data collection and was based in analytic induction (Znaniecki, 1934). Five initial areas of inquiry were chosen based on the researcher's own experience with adult online classes while successfully pursuing a bachelor of applied science in culinary management degree in 2012. Each of these areas of inquiry corresponded with the topic of one of this study's research questions. The researcher refined the preliminary coding scheme, and, as follow up interviews were completed, allowed the evolving inductive thematic conceptual model of AOCHS experience to inform his purposeful selection of phenotypical representatives of common adult online higher education market segments in order to achieve the greatest possible consistency between the evolving conceptual model and a rich description of lived AOCHS experience.

Initial Coding Model before Data Collection

The a priori version of the coding scheme is provided in Appendix F. Selective coding was applied to create labels for the five a priori areas of inquiry, which served as a coding structure representing the categories established by the study's research questions. Progressively more detailed and interpretive codes were applied as the analysis proceeded, leading to a comprehensive set of analytical codes to describe all of the meaningful themes and subthemes in the data. Evidence not present in the initial conceptual model, where encountered, were recorded and assessed by the researcher for possible use in expanding or refining the conceptual model. Findings across the combined groups of interviews were used as triangulating elements in the multiple-case analysis. Consistent with qualitative research practice standards, the units of analysis in this study were concepts that emerge from the data (Babbie, 2013). These concepts,

thematic components of AOCHS experience, were evaluated against multiple sources of data. In this study, key evidence presented in support of assertions and conclusions is traceable through explicitly cited references to survey or interview data and correspond to specific research questions and areas of inquiry.

Integrating Case Study Data with Other Sources

During and after the qualitative data analysis, additional sources were examined to identify evidence that might corroborate or call into question statements made by the participants. Subsequently, the a priori areas of inquiry were reassessed and refined to accommodate any inconsistencies discovered through analysis of the phenotypical representative case interview transcripts and questionnaire responses. Each interview transcript was examined using the process of in-case analysis to determine the extent to which its content supplemented or corroborated the hypothetical experiential model. A cross-case analysis was also conducted. Yin (1981) described cross-case analysis as a process of case comparison in which the researcher examines data from multiple individual cases searching for meaningful patterns that are central to the purpose of the case investigation. This qualitative analysis was then compared with the conclusions drawn from the literature review to triangulate the data analysis process and add credibility to the study's conclusions and recommendations. Questionnaire response data and telephone interview transcript data were also supplemented with information from other journal articles and publications related to adult online higher education, including archival data published by departments of the U.S. government and other relevant public and private organizations. The conclusions from these analyses were reported along with charts and graphical figures depicting the factors supporting adult online college honor student success. The

reported findings from this study are accompanied by conclusions and recommendations for future research. Findings from this analysis will be presented in Chapter 4.

Role of the Researcher

After retiring from a near 40-year career as a telecommunications and information technology executive in several Global Corporations in 2010, the researcher pursued one of his lifelong passions and enrolled in an undergraduate blended classroom/online degree program in culinary systems management at the International Culinary School at the Art institute of Michigan. During his 2-year experience in successfully completing the degree, the researcher observed many features of the technology implemented in the adult online higher education environment that seemed to lack efficiency and effectiveness compared to the current commercial Internet business sector. In spite of these challenges, some students achieved high grade point averages and were consistently recognized on their school's academic honors list. The researcher, who is now planning to start a second career as a professional educator, is keenly interested in learning more about the underlying factors supporting these honor students' success in online classes.

Qualitative researchers seek to understand phenomena through the study of both events and words. Denzin and Lincoln (2000) characterized qualitative research as a situated activity that locates the researcher in the world. "It consists of a set of interpretive, material practices that make the world visible' (p. 3). Barrett (2007) describes the process of conducting qualitative research as a series of information transformations. The first transformations involve creating representations of the phenomenal world through data generation, which is an "active, creative, and improvisational process" (Graue & Walsh, 1998, p. 91). The researcher gathers documents or artifacts, and conducts observations and interviews that illuminate the phenomena under

study. Denzin and Lincoln (2000) refer to the researcher as instrument, because the researcher's accuracy in observation and highly developed skill for eliciting detail from respondents are key factors in ensuring the quality of qualitative research. This concept "accentuates the distinctive function of the researcher's knowledge, perspective, and subjectivity in data acquisition" (Barrett, 2007, p 418).

A second transformation occurs when the raw "data generated in the field are shaped into data records by the researcher. These data records are produced through organizing and reconstructing the researcher's notes into the form of permanent records that serve as the "evidentiary warrants" of the generated data" (Graue & Walsh, 1998, p. 142). "Working with the data records leads to a third transformation, in which the researcher analyzes the data, develops descriptive codes for patterns in the data, and inductively generates larger themes that emerge from iterative passes through the records" (p. 142). These transformations also involve interpreting the meaning of the data, and comparing this interpretation to other sources of insight from related research and literature. Data analysis and interpretation are frequently intertwined. The final research findings reflect both primary observational evidence of the phenomenon and reasoned interpretation of the phenomenon by the researcher (Graue & Walsh, 1998).

Five areas of inquiry for this study were chosen based on the researcher's personal experience with adult online classes. Each of these areas of inquiry corresponded with the topic of one of this study's research questions. The researcher refined the preliminary framework as initial thematic coding and follow-up interviews were completed in order to achieve the greatest possible consistency between the evolving conceptual model and experiential phenomena under study.

The researcher served as an adjunct online instructor in undergraduate business administration before this study was conducted. In order to avoid any potential bias caused by previous social or academic relationships, no previous students from the researcher's classes were interviewed for this study. The researcher recruited case study subjects for this research based on their participation in an online survey sent to 500 randomly selected adult online college honor students. Interview participants were purposefully selected from the respondents who voluntarily agreed to discuss their responses in greater detail under the terms of the informed consent form (see Appendix I). Each of these interviewees was representative of a different important phenotypical market segment in the adult online higher education student population based on his or her individual characteristics and educational aspirations.

The axial coding process for the qualitative data from the AOCHS questionnaire responses and follow up interviews was analytic induction (Znaniecki, 1934). The initial conceptual model in analytic induction was derived from the researcher's personal experiences. For the interview phase of the study, the researcher made use of purposeful sampling, where specific individuals were selected for inclusion because they were most likely to help broaden the theoretical explanation. As a result, a more refined and yet more encompassing theoretical model was developed. Obtaining a heterogeneous sample guarded against bias that might have arisen if the researcher had followed a tendency to select only interview subjects with perspectives, motivations, and practices similar to his own. The researcher personally conducted the coding of questionnaire responses and phenomenological investigation of follow up interviews for this study, and he is aware of his probable bias due to his personal experiences as an online adult online student and instructor. The researcher sought to reduce the threat of any bias that might be caused by his recent personal experiences by engaging in periodic reviews of

his data analysis and data interpretation processes with his dissertation committee chairperson. In order to address researcher bias prior to beginning the participant interviews, the researcher participated in a bracketing interview conducted by his dissertation committee chairperson using the methodology described by Gearing (2008). This procedure allowed the researcher to recognize and compartmentalize his personal preconceptions and biases using the phenomenological process of epoché, or a conscious suspension of judgement, so that findings and conclusions from research are reported with appropriate consideration of these observer biases. Results of the bracketing interview are presented in Chapter 4.

Protection of Human Participants

Randomly selected students who were identified through the academic honors process were contacted by the researcher in a congratulatory email in which an explanation of the study was also provided. In the email, the students were invited to participate in this study and offered access to the results in a final report.

It is the policy of the institution of higher learning at which this research was conducted that when research involves human subjects, a comprehensive review of the research design must be completed, reviewed, and approved by the college's IRB prior to the start of data collection. The purpose of the IRB is to ensure that the risk to human subjects is minimal and that an explanation of the study's risks and benefits is provided to each potential participant. Included in the IRB application for approval were a detailed description of the proposed study with approval of the campus president (see Appendix B), and the text of the informed consent form (see Appendix I).

The sampling procedure and participation criteria for this study are based on publically available academic honors lists at the adult online college. In order to protect the privacy of the

participants in the interview process, transcripts of interviews have been identified by pseudonyms and only the researcher and his faculty advisor had access to a list of participants' names and corresponding pseudonyms. In accordance with the institution's IRB policy, a repository of the case study data files, and recordings of narratives related to the interviews will be preserved for a minimum of 3 years. Following this guideline, the researcher will establish and maintain a CSDb (see Appendix L). All study documents and recorded data will be stored in digital files in standard Microsoft office formats at the researcher's residence. In addition, one backup copy of the study data will also be made. This backup database will be secured with a strong encryption algorithm and stored as a directory in the researcher's private online drive in his college's virtual data storage facility. The encryption key for the online backup will be kept on disk storage in a separate physical location with no network connectivity. No significant conflicts of interest or ethical concerns in data collection or analysis have been identified for this study.

Summary

The rapid growth in the number of adult online college classes available today has made the online higher education industry much more like the Internet commerce and social media business sectors than ever before. Therefore, the application of modern business management practices to online higher education is appropriate. Just as in their successful use in other similar online business contexts, the application of qualitative analytic induction, axial coding, and multiple case study methodologies served as effective approach to describe the experiences of successful adult online college students. In Chapter 4, results from this research will be presented.

CHAPTER FOUR

RESULTS

Adult online college education presents unique opportunities to employ technical capabilities to enable deep and meaningful learning. The purpose of this study was to explore the experiences of adult online college honor students in order to identify important factors supporting their use of technology in the online learning environment. The potential benefits from this exploration are the discovery of opportunities to exploit new technical learning capabilities and to enable deep and meaningful online learning for more of the students participating in adult online college environments.

Researcher in Epoché

The researcher's life experiences, values, and beliefs have influenced the results of this study. Therefore, it was necessary that these influences be clearly documented and incorporated into a balanced, polyvalent analysis of the study data.

Bracketing Interview

According to Thomas and Pollio (2002), the goal of a bracketing interview "is to highlight to the researcher his/her pre-understandings about the topic of investigation" (p. 33). In accordance with common practice in phenomenological research, the research design for this study included a bracketing interview intended to explore and document researcher attitudes and biases that might influence how subsequent research inquiry is conducted, analyzed, and reported (Gearing, 2008). Awareness of personal biases assists researchers in ensuring that the findings and conclusions of their studies do not lack validity due to their personal biases. Bracketing interviews also serve as tests to allow the participants to evaluate the design and content of the interview protocol and to practice in advance the qualitative data collection used in the study.

The researcher participated in a 55-minute bracketing interview conducted in a WEBEX teleconference by his dissertation advisor on May 12, 2015. The participants used case study interview protocol from the researcher's approved dissertation proposal consisting of 21 research questions. The faculty member asked the questions and allowed the researcher to respond, gathering important insights concerning the biases and preconceptions of the researcher. This process also allowed the researcher to experience the contextual and emotional effects of the interviews process as an interview subject.

The interview questions were open-ended and intended to elicit rich, detailed description of adult online college honor student experiences. The researcher transcribed the interview recording the following day. This interview recording and its transcript are included in case study records (see Appendix I).

Researcher Preconceptions and Biases

As a retired career information technology executive for major global multinational corporations, the researcher has experienced firsthand the evolution of teleconferencing, distance education, and virtual team management technologies from paper and voice-based to digital text and image-based systems. Having recently completed a partially online bachelor's degree in culinary management, the researcher was surprised that much of the educational technology and practice in online higher education have lagged far behind the systems employed in the modern business sector. Asynchronous, text-based learning management systems are still in widespread use as the primary context for class discussion, and those students seeking highly visual, audio, and interactive learning experiences must find and access resources only available outside their educational institution's IT infrastructure. Although the most innovative and effective learning technologies are becoming available through higher education companies and open education

consortia supported by some of the elite institutions of higher education, many adult online college students still pursue their degrees in undergraduate classes employing text-based technology and 20-year-old practices for remote instruction and assessment.

The biases of the researcher were reflected in this study's a priori conceptual modeling, the research design of this study, and in the bracketing interview. These biases include the following:

- Many adult online college students still pursue their degrees in undergraduate classes employing asynchronous text-based technology and 20-year-old practices for instruction and assessment.
- Communication and learning are more effective in sensory-rich computing environments providing multiple channels of information exchange through not only text but also audio, video, and interactive functionality.
- Academic success in online college is facilitated by a strong work ethic, good planning, and effective time management.
- The best learning experiences incorporate presentation of relevant new information, clear and precise work assignments, useful feedback available on a timely basis, rewards for successful progress, and helpful, individualized support when needed.
- The best online teachers are successful at overcoming the lack of face-to-face interaction with students by building positive trusting relationships in the digital online learning context. In addition to assigning and grading activities, they actively encourage student success.
- Fellow students in online classes are seldom important contributors to a student's success. Group projects and collaborative tasks are frequently frustrating for honor

students who take on disproportionately large shares of the work when fellow students fail to contribute.

- The most effective technologies for learning in online classes are usually available on the public Internet rather than the IT infrastructure of the institution of higher learning that provides the class. Class templates, LMS's, and traditional texts, while necessary, are insufficient for effectual and compelling online instruction.
- Even after the brick-and-mortar walls were eliminated from the online classroom, vestigial "virtual walls" remained solidly in place. Now, as social interaction, personal commerce, and vocational activities all coexist on the same electronic devices and in the same digital contexts as online higher education activities, the dichotomy of school world and real world has coalesced into a single digitally mediated life experience having fundamental implications for the authenticity of course work, the real value of assignments, and the perceived "pleasure or pain" of the adult online college learning experience.

Participant Demographics

After receiving approval from the Baker College IRB for research on human subjects, the researcher sent solicitation emails to 500 randomly selected students from the 10,369 students whose names were included on the winter 2014 academic honors lists (President's list, Dean's list for fulltime students, or Dean's list for part-time students). All case participants had previously been enrolled in at least one online undergraduate course at Baker College during the winter 2013 academic quarter. Ninety-three of the 500 adult online college students contacted agreed to participate and followed the URL link embedded in the email to a questionnaire-specific informed consent statement in a Google form survey application

located on the Baker College intranet infrastructure. The online form was scripted to include identity verification through student login and to enforce a "one response only per person" rule. The Google script that managed the online questionnaire allowed the participants to suspend their answer session and to return and edit their answers for the 30-day duration of the online study.

After accepting the terms of participation in the study, the participants responded to the five open-ended survey questions concerning their experiences as academically successful online college students. In addition to these questions, the form also contained an additional question asking whether the responder would agree to participate in a telephone follow-up interview regarding their responses to the questionnaire. Of the 93 students responding, 41 answered "yes" to a possible follow-up interview. The researcher subsequently invited them by email to schedule an interview during the next 2 weeks. The follow-up interview invitations included a link to the detailed common Baker College informed consent form (see Appendix I).

Many AOCHS responding to the questionnaire were candid in their criticism of instructor's practices; however, when the virtual "veil of anonymity" was pierced by the prospect of a one-to-one cross examination by a faculty member (the researcher) they became uncomfortable. The standard Baker College informed consent form reminded them of the potential harm that open communication of their dissatisfaction might cause.

> I felt as though when I reached out to an online instructor with a concern that it could be held against you and you may be sabotaging your own grades (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

After reviewing and accepting the terms of informed consent, four of the students who responded to the questionnaire participated in a recorded follow-up telephone interview with the

researcher. Each of these interviewees was representative of a different important market segment in the adult online higher education student population based on his or her individual characteristics and educational aspirations. Transcripts of these interviews are included in the CSDb (see Appendix L).

Study Questionnaire Respondents

Table1 contains a summary of study questionnaire respondent demographics.

Table 1

Participant Attributes

Gender	Male	Female		
	23	70		
	25%	75%		
Age group	Less than 25 years	25 to 39 years	40 years or older	
	17	40	36	
	18%	43%	39%	
Relative position in program of study	Early	Around mid-way	Near graduation	
	6	19	68	
	6%	20%	73%	
Portion of POS online	One or no online classes	A few online classes	Significant % of online classes	All online
	4	23	30	36
	6.30%	24%	32.30%	37.50%
Would you agree to a follow up phone call?	Yes	No		
	41	52		
	44%	56%		

Segmentation in the Adult Online Higher Education Marketplace

While the adults enrolled in online college courses are a widely diverse and heterogeneous group, it is commonly used marketing practice, to identify common market segments that are defined by shared customer characteristics, needs, and expectations. In order to design the sampling methodology for this study, the researcher used his own business and academic experience to construct a composite model of characteristics that might influence the experience of AOCHS success. This model comprised student phenotypes representing various common adult online college market segments. The differences documented by the researcher in the lived experiences of the participants support the internal validity of the study by describing the phenomena that comprise AOCHS experience from multiple, commonly held perspectives. Although only four of the original 41 volunteering questionnaire responders were willing participate in follow-up interviews under the terms of the institutionally mandated informed consent agreement, it was fortuitous that they comprised a phenotypically diverse sample of the 93 AOCHS who responded to the online questionnaire.

Table 2 contains a brief profile of each of four individuals interviewed by the researcher. Although these four phenotypes do not represent 100% of the market in adult online higher education, they are clearly identifiable based on participant responses to the questionnaire and are useful as categories for data reduction and analysis in this exploratory study of the lived experience of AOCHS.

Table 2

AOCHS Phenotypical Characteristics

AOCHS Phenotype	Relative stage in career	Educational goal	Social situation
A	Mid	Nontechnical bachelor's degree	Supporting employer & family
B	Early	Technical bachelor's degree	Demanding employer & family
C	Early	Post baccalaureate certification	Supporting employer & family
D	Late	Bachelor's degree and graduate degree	Fulltime student Supporting family

The common factors which identify membership in these phenotypical market segments are relative stage in career (early career, midcareer, or late career), educational goal (nontechnical bachelor's degree, technical bachelor's degree, post baccalaureate certification, or bachelor's degree leading to graduate study), and social situation (family and employment). The four phenotypical participants' responses to the AOCHS online questionnaire are provided in Appendix H. In accordance with ethical and confidentiality policies mutually agreed prior to the interview, each student was assigned a pseudonym for reporting purposes. Care was given in the preparation of the following interview summaries to maintain the confidentiality of each student.

AOCHS Phenotype A (Ann). This mid-career student works in accounting and is seeking a bachelor's degree to support career advancement.

Ann is about midway through her program of study to earn a bachelor's degree in business. All of her classes are online. She attributes her success to positive collaboration with fellow online classmates and direct telephone and email communication with online instructors. She enjoys the schedule flexibility online classes allow her in completing assignments. She reports

that most of her teachers are “willing to help you if you just ask” However she is frustrated by certain teachers who enforce policies such as “no credit for late work” and require formal references for every posted discussion board comment, to a “T” with no flexibility. She also believes that teachers should grade students less strictly in classes which are not their major area of study. She values courteous communication and mutual respect among her fellow online classmates. She is “laid back” while studying, however she is sometimes excited in anticipation of receiving responses to her comments in online discussions or feedback from a teacher. The best learning experience she can recall is a recent class in which she received individual assistance from the instructor to clarify the requirements for a project, making it much easier and more enjoyable. She uses both a personal computer browser and a smartphone app to participate in her classes. She suggests that teacher response time in answering student questions could be improved in online classes.

AOCHS Phenotype B (Bill). This early career student works in information technology and is seeking a bachelor’s degree to support career advancement and a move to the cyber security sector.

Bill is near graduation in his program of study to earn a bachelor’s degree in information technology. All of his classes are online. Bill attributes his academic success to effective time management, “balancing work, school, and family time to ensure that everything gets done.” He states that most of his online teachers have been great. He reports that the majority of his classmates “seem to care about their education and add great experience and substance to the course which it essential in an online environment.” He states the he is passionate about the classes on subjects he likes. He associates his best learning experiences with online labs. ”Since I am an IT student using virtual labs to see how things work and figuring out why is my favorite

way to learn. Writing papers on a weekly basis gets boring and adding in labs keeps things different and fresh." Bill believes that virtual labs such as Microsoft labs and the Linux remote access to Baker College are the most effective learning technologies used in his online classes, and he also finds the Internet useful for learning. He is disappointed that some courses used outdated textbooks and course material. This is particularly a problem in information technology where the relevance of learning is directly dependent upon its technical currency.

AOCHS Phenotype C (Cris.) This early career student works in accounting and already holds a bachelor's degree. She is seeking further post baccalaureate certifications to support career advancement and compensation increases.

Cris is early in her program of study to earn a post baccalaureate certification in accounting. Only a few of her classes are online. She reports that she was hesitant to take an online class. So when she did she made sure the topic was one she was familiar with. She finds it helpful when instructors provide supplemental resources, such as instructional videos to help students learn the course material. She reports that she has almost no connection with other students in online classes, although in an on ground class it is very easy for her to develop relationships with fellow students. She reports that she experiences frustration in online classes when she cannot understand something. This made more intense because she cannot receive an answer immediately, as she would in an on ground class. The best online learning experience she can recall was her personal finance class because it gave her tons of practical information that she will be able to use for the rest of her life. She states that she has been disappointed with online discussion boards and tutoring in online classes because they are less effective that their on ground class equivalents. She believes the Internet has useful resources for learning, and she suggests the video teleconferencing might make online tutoring more helpful.

AOCHS Phenotype D (Dez). This late career student is in a transition for early retirement to a new career after 26 years of employment in the automotive business sector. She is seeking a bachelor's and subsequently a master's degree.

Dez is near graduation in her program of study to earn a baccalaureate degree. A significant percentage of her classes are online. She attributes her academic success to her being an individual who works hard to succeed in her education. She wants to do well in every course so she puts forth the effort. She states that because online course sessions are short, they are more work. She feels she must go online every day and submit assignments and discussion board data promptly. Although she only needs to sign on five out of seven days, she usually logs in every day. This practice keeps her up to speed with the classroom conversations and keeps her in the loop. She also prints out course information and keeps it in a folder as if she were in a classroom setting because she feels that, "It is imperative to remain organized at all times." She states that the majority of her instructors were adequate. She reports that she enjoys the online class experience more with those instructors who consistently actively participate in the discussion forum. "When the instructor is visible in our discussion forum, there is no lapse or difficulty trying to keep the conversation going because the instructor is there and steering us the whole way." Dez comments that when the instructor is not active there are usually online classroom leaders who "keep the conversation going so that we can all continue to communicate to earn our points." She also enjoys when the instructor is an expert in their field because we gain so much more knowledge from they. Dez reports that it feels great to come away with some real learning from an online class. Dez has had great experiences with her classmates in general. On occasion, she has encountered students who were a little aggressive with their responses, but each time the instructor handled the situation to ensure it did not end badly. Dez reports that because she

expects a lot from herself, she is usually stressed when participating in online classes, especially in the first week, when major assignments are due, and when grades are announced. Dez states that she enjoys being in the comfort of her home and being able to go online at any time to participate in class She also enjoys the fast pace and frequent transition from one online class to the next. Dez reports that she feels the learning management system (Blackboard LMS) and online library resources are effective learning technologies in her online classes, and that she is comfortable using them. She suggests that 100% online class options be made available for all degree programs. And she feels that the very expensive textbooks required for some courses be utilized fully or eliminated.

Findings

In response to the online questionnaire and in follow-up interviews, study participants described meaningful experiences and successful strategies that they employ to achieve academic success in online undergraduate college classes. Their responses, which adumbrate the factors that they felt contributed significantly to their academic successes, included several emergent themes that were added to the researcher's prestudy model of effective learning in adult online higher education. They included a mature self-image and work ethic, effective management of time, effective workload planning, clear and timely communication with faculty members, positive collaboration with classmates, and fluent use of learning technology. These attitudes, strategies and activities may also be useful for other adult online college students who are striving to achieve similar positive results.

The extended community of inquiry model of online education served as the context in which the research questions were investigated, Areas of inquiry were used to categorize and report findings in the online questionnaire responses, in accordance with the approach for axial

coding and data reduction described in Chapter 3. Table 3 describes the association of the research questions with their corresponding areas of inquiry.

Table 3

AOCHS Customer Experience Study Coding Schema

Research Question	Area of Inquiry (for coding)	Code
Research Question 1: How do adult online college honor students experience deep and meaningful learning in online classes?	Self-reported AOCHS learning experience- deep and meaningful learning	A1
Research Question 2: How do adult online college honor students achieve critical engagement in their classes?	Self-reported AOCHS interaction with others- critical engagement	A2
Research Question 3: How do adult online college honor students use information technology in their online classes for learning?	Learning technology experience OL class	A3
Question 4: How do adult online college honor students use information technology outside of their online classes for learning?	Learning technology outside of class	A4
Research Question 5: What improvements in adult online college classes would AOCHS suggest?	Effectiveness of online learning environment- suggested improvements	A5

Findings from Qualitative Data Analysis

In order to evaluate whether certain areas of inquiry and their associate themes and subthemes (analytical codes) were mentioned as important in the self-described lived experience of participants, the researcher tabulated the number of times that each participant included each theme or subtheme in his or her responses. Higher numbers of references may

indicate a higher respondent perspective significance associated with the theme or subtheme (see Appendix G).

This interpretive methodology does not suggest that the complex first-person narrative participant responses recorded in the questionnaire data files can be reduced to valid quantitative assessments of the relative importance of each theme simply by counting its references and comparing the frequencies. Alternatively, the coding analysis was used by the researcher to identify themes which, according to density of reference, the participants indicated were important in their lived experience of AOCHS success. The findings reported from this analysis were not intended to be a quantitative method of testing hypotheses concerning relative importance of AOCHS success factors, but rather they were used by the researcher to direct his qualitative analysis of the questionnaire data toward the most promising areas of inquiry.

To illustrate the process used to develop coding density scores, Table G2 includes summarized results for the four themes in area of inquiry A2 - *Critical Engagement.* Reference counts are displayed for each theme or subtheme listed in descending order of importance. The theme *Teachers* has the highest coding density in this area of inquiry A2 - *Critical Engagement* at 62.3% with 291 references.

Findings for the area of inquiry associated with each research question are described in this section in terms of coded themes and subthemes (axial codes). Theme findings are reported in order of decreasing coding density scores shown in Table 4 and in Figure 7.

Table 4

AOCHS Questionnaire Theme Coding Summary

Area of Inquiry (AI)	Theme	AI coding density percent	AI coding density mean	Theme coding density percent	References
A1 Deep and meaningful learning		23%	74.5		298
	Practices			49.7%	148
	Ergodic dialog			25.8%	77
	Attitudes			20.1%	60
	Cognitive presence			4.4%	13
A2 Critical engagement		36%	116.8		467
	Teachers			62.3%	291
	Classmates			32.8%	153
	Employer			1.7%	8
	Family			3.2%	15
A3 Learning technology in OL classes		18%	76.0		228
	Software			70.6%	161
	Information presence			21.9%	50
	Online and campus support			7.5%	17
A4 Learning technology in real life		10%	31.3		125
	Hardware			33.6%	42
	Network			31.2%	39
	Apps, sites, and services			28.0%	35
	do not understand "used to learn outside of OL class"			7.2%	9
A5 Suggested improvements in OL classes		13%	32.6		163
	Practices in Discussion Boards			49.1%	80
	Exemplary classes			25.8%	42
	timeliness of assessments and grading			10.4%	17
	textbooks			8.6%	14
		100%			1282

Note. Higher theme coding density indicates that theme was more frequently described as being important in achieving AOCHS success in questionnaire response analysis. *Italics indicate emergent themes developed after the a priori model was developed.*

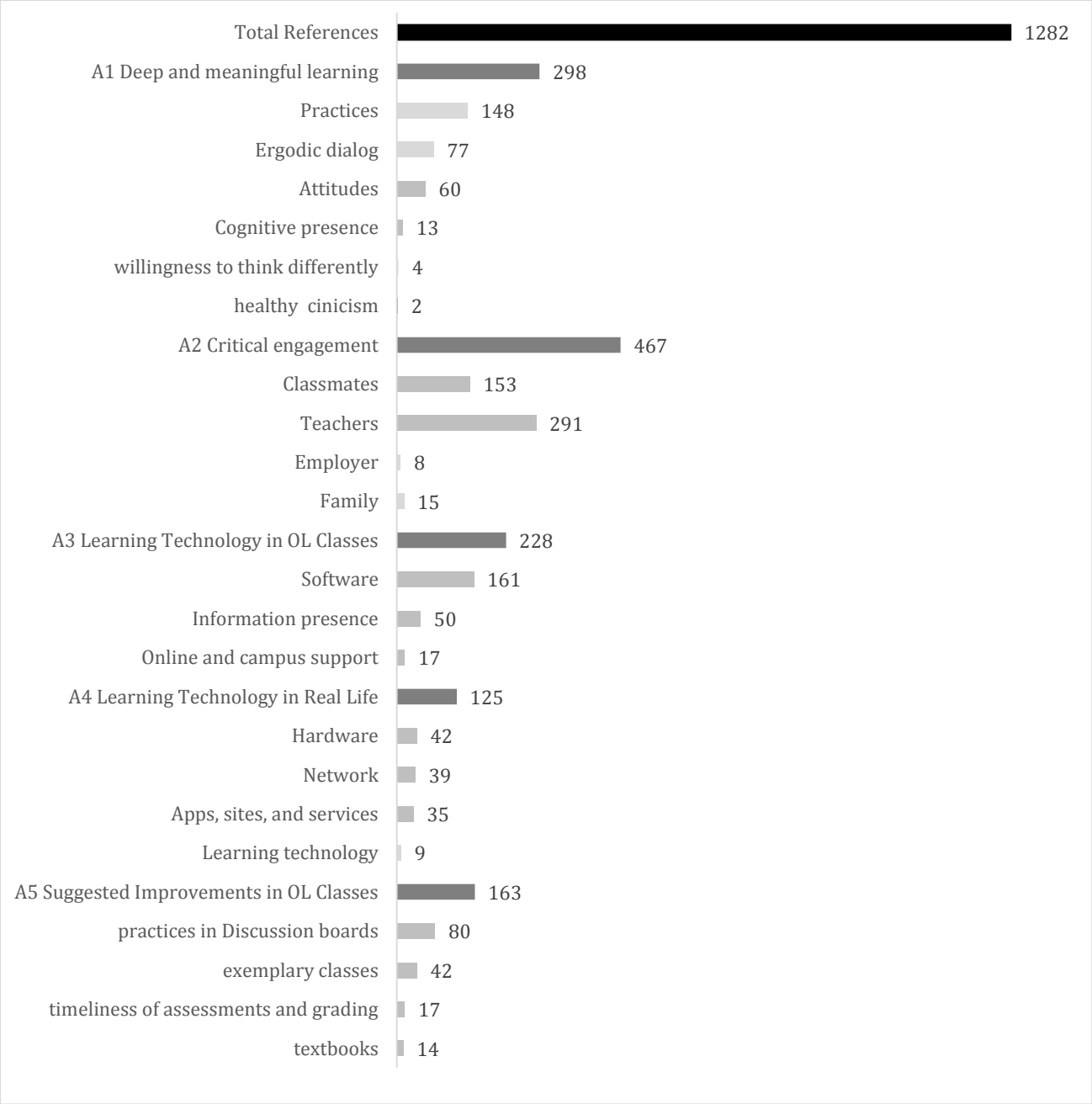

Figure 7. Coding density by area of inquiry theme.

Appendix G contains details of these summary data by area of inquiry and theme (Tables G1 through G5). Coding density scores are noted in parentheses after the title of each area of inquiry.

Research Question 1: How do adult online college honor students experience deep and meaningful learning in online classes?

Area of inquiry A1 - Deep and meaningful learning (coding density 23%, 298 references). AOCHS respondents stated that important personal practices supporting their deep and meaningful learning experience were their time management strategies, good study habits, self-teaching techniques and internal motivation facilitating self-starting. They also associated learning success with conducting an exploratory conversation with the topic of study or research (ergodic dialog) analogous to foraging for knowledge, describing a process of wondering while wandering about the Internet. AOCHS stated that their successful learning experience was based on a perception of the value of the knowledge to be obtained, the authenticity of the learning activity, and a strong goal orientation derived from self-motivation, maturity, a feeling of being respected as a person with perseverance and a strong work ethic. Their cognitive presence in the online class context was strengthened by a willingness to think differently and moderated by healthy cynicism.

Research Question 2: How do adult online college honor students achieve critical engagement in their classes?

Area of Inquiry A2 - Critical engagement (Coding Density 36%, 467 references). AOCHS described critical engagement in their online classes with four important groups; teachers, classmates, employers, and family.

The large number of references to teachers in the responses demonstrated the very high level of importance that teachers hold in the undergraduate higher education context. Students cited helpfulness if asked, active presence, support, responsiveness, and commitment to student success as key requirements of the teacher's role. Also listed as important factors for critical engagement were teachers' communication of clear tasks and schedules, expectations of students, practices of instruction, grading equity, feedback, and understanding of factors affecting students' lives. AOCHS also rated teacher qualifications, competence, friendliness, passion for their subject, consistency of rule enforcement, and responsiveness to student requests for help as important to successful online classes.

AOCHS described their engagements with fellow students as frequently positive and mutually supportive. Important negative factors in engagement with classmates in discussion boards in online classes were problems with the quality of their work, poor spelling, grammar, and lack of contribution to collaborative assignments. Respondents also cited the commonly encountered problem of inequitable contribution levels to the work required in collaborative group projects. It was also stated that the enforcement of a code of ethics ensuring professionalism and courtesy among classmates facilitates effective learning and supports the formation of lasting friendships in some online classes.

The AOCH student's employer's role in his or her achievement of critical engagement in online classes is defined by the combination of demands on and support for provided. The time demands of employment can sometimes be in conflict with the time demands of class assignments and deadlines, however financial assistance with tuition costs and policies that allow school work to be done in the workplace on breaks or lunch hours provide valuable support for academic success.

The family of the AOCH student also has a significant effect on critical engagement though a combination demands and means of support. The unpredictable and frequently urgent responsibilities and obligations of parenthood are often in conflict with the work demands of class assignments and inflexible deadlines, however the support and encouragement of a spouse or domestic partner can be a fundamental factor in academic success.

Research Question 3: How do adult online college honor students use information technology in their online classes for learning?

Area of Inquiry A3 - Learning Technology in OL Classes (Coding Density 18%, 228 references). The technology employed in online higher education classes creates a context which facilitates learning through critical engagement of the students and teacher with the topic of study. AOCHS cited the LMS as the most significant and important component of this context. AOCHS report that problems with the functionality or reliability of these systems have a severe negative impact on their success. AOCHS also report that online library resources and educational database subscriptions are very important for effective learning in association with research based essays and collaborative projects. However, some AOCHS feel that using college library resources is cumbersome and confusing compared to free publically available resources such as search engines, encyclopedias, and educational websites. AOCHS also cited expertise with the use of standard office software, including document processors, spreadsheets, and email as an import factor in supporting academic success. In addition, interactive online laboratories and simulation websites were reported to be very effective in facilitating learning in subject areas where quantitative computation or coding skills must be developed through practice. Student collaboration can also be supported and effectively assessed using the WIKI based component of many LMS's.

AOCHS report that the presence and availability of information in the online class environment is an important predictor of effective learning. Whether it is cataloged and distributed by the instructor or discovered on the Internet by the student in search of authoritative and scholarly reference material, relevant information is the source and raw material for the generation of knowledge. Many AOCHS report that the search for and the discovery of knowledge generation information is a very pleasurable part of the online learning process.

Online and on campus support organizations, including technical support, library services, academic advisors, tutoring services, and internship and employment services also were cited in respondents' lists of important factors supporting their academic success.

Research Question 4: How do adult online college honor students use information technology outside of their online classes for learning?

Area of Inquiry A4 - Learning Technology outside class (Coding Density 10%, 125 references). AOCHS reported that they used their personal computing devices, mobile smart phones, tablets, and calculating devices for academic learning as well as day-to-day activities associated with social interaction, business, and recreation. There was strong agreement among most AOCHS respondents that a fast and reliable Internet connection is absolutely necessary. Among the important Internet applications, sites, and services used by AOCHS are; email, YouTube, industry newsletters, news and current events websites, audio books, cloud backup, podcasts, Wikipedia, social media sites, blogs, online magazines, analytics tools, online retail, online entertainment, online dictionaries, webinars, and video conferencing.

Approximately 10% of the AOCHS respondents stated that the meaning and intent of this question was unclear suggesting that there is no distinction between learning in an online higher

education context and learning in real life. The devices, the processes, and even the Internet applications, sites, and services used by AOCHS are equivalent in either context.

Research Question 5: What improvements in adult online college classes would AOCHS suggest?

Area of Inquiry A5 - Suggested Improvements in OL Classes (Coding Density 13%, 163 references). While many AOCHS respondents reported pleasurable and effective learning experiences while participating in the online discussion boards, the response database contained many suggestions for improvement in these text-based asynchronous, semi-structured, learning environments. It was strongly suggested that arbitrary criteria imposed upon participants in the grading process imposed unnecessary and onerous conditions that negatively impacted effective learning. For example, the requirement to post topic-related comments and engage in substantive dialogue with fellow students on at least 5 days of every week was thought by AOCHS to be arbitrary and not an authentic criterion for assessment of the quality of their participation or the effectiveness of their learning experiences. It was suggested that the minimum number of posts required per week should be reduced to two or more, and that grading should be based on more legitimate criteria such as effective engagement with others in reviewing the study material provided, engaging in courteous and professional debate of issues, and contributing fresh new perspectives and authoritative outside insights from outside research into the dialog.

As they strongly stressed in their description of experiences with teachers in online classes (*A2 Critical engagement*), the AOCHS respondents reported that they learned nothing from teachers who failed to take an active participatory role in the online discussion boards. Teachers who provided praise for students doing good work and encouragement for students

producing weaker results were not only more effective, but also much more interesting and engaging.

In addition to active presence in the discussion, AOCHS respondents commented frequently on the importance of the teacher's responsibly to ensure that the boundaries of the discussion were set optimally for effective dialog. A commonly cited example was the case where the few discussion questions provided for the week were answered by the first few posts, leaving nothing more for students to write about. It is the responsibility of the teacher to provide adequate topic related discussion material to support useful dialog and effective learning experiences though out every weekly online class session. In addition, while many AOCHS reported that they learned best while engaging individually in Internet research concerning interesting aspects of the study topic, and enjoyed contributing material from authoritative, scholarly sources into class, they felt frustrated when teachers failed to respect and give credit for their own original thoughts.

In describing their best online class learning experiences, AOCHS reported that many exemplary classes were challenging and required significant time and effort to complete. In spite of the challenges, however, the relevance and value of the new knowledge they obtained provided an excellent return on their investment. The teachers in exemplary classes frequently enhanced the vitality and realness of the topic by providing rich sources of information such as video lectures, relating real-life experiences, and encouraging students to maintain a healthy level of cynicism balanced by willingness to think differently as their knowledge increased.

AOCHS frequently citied opportunities for improvement in the timeliness and consistency of grading and assessment in online classes. They favored formative assessment, in which the feedback is available to the student in time to support performance improvement. They

reported instances when inadequately detailed feedback made it impossible to understand the reason for a low grade, in these situations they felt frustrated and unsupported in their efforts to make their best effort. Some AOCHS suggested that the expensive textbooks that are required in some classes be used more effectively or eliminated. Time-intensive textbook reading assignments have almost no value when the core course material is contained in supplementary materials such as PowerPoint presentations and lectures from the instructor. E-book alternatives to expensive paper textbooks were suggested.

AOCHS described their best online learning experiences as classes where the teacher was actively present and engaged in the class discussions as a fellow learner. Instructors whose love of learning is evident in their tone of communication and whose self-confidence allows them to place the topic at the center of the learning experience were highly valued by AOCHS and cited as great teachers.

In the results of the online questionnaire response analysis described above, AOCHS study participants described meaningful experiences and successful strategies that they employ to achieve academic success in online undergraduate college classes. Their responses, which revealed the factors that they felt contributed significantly to their academic successes, confirmed the researcher's conceptual model of AOCHS experience and also included several emergent themes (timely assessment and blurred boundaries between in class and outside class learning) that were added to the researcher's pre-study model of effective learning factors in adult online higher education: a mature self-image and work ethic, effective management of time, effective workload planning, clear and timely communication with faculty members, positive collaboration with classmates, and fluent use of learning technology.

Results of Multiple Case Study Analysis

In accordance with ethical and confidentiality policies mutually agreed prior to the interview, each student was assigned a pseudonym for reporting purposes. Care was given in the preparation of the following interview summaries to maintain the confidentiality of each student. Wherever participant quotes from the online questionnaire or case interviews transcripts are used, their archival reference source is their corresponding searchable transcript or questionnaire response file in the CSDb (see Appendix L). The order in which these case studies appear is alphabetical by arbitrarily assigned phenotype pseudonym and not relevant to the results of this study.

Ann

Nonjudgmental collaboration and having the freedom to login whenever you want to. I like that there's no stress and having to get off work at a certain time to be on campus, and not worrying about traffic.

Ann is a midcareer online student who works in accounting and is seeking a bachelor's degree to support career advancement. Ann stated the main reason for your success in online classes are non-judgmental collaboration and having the freedom to login whenever you want to, avoiding the stress of commuting to campus. She has support from her employer and can do schoolwork on breaks at work.

Ann said that her best learning experience was a marketing class that turned out to be a sales class. And that she was better able to understand what the class project was by talking to her teacher over the phone directly. She believes that one reason online classes are easier is that you can reach out to the teacher any time during the day rather than waiting for class time. She also stated that in some ways online classes are more challenging, but that she I sometimes get

more from them. Ann was an honor student in high school but had experienced some problems previously at a different college. Ann states that her experience with classmates was positive. The guidelines are very clear that you should not be judgmental and to be positive.

> I have enjoyed my classes mostly . . . You get to communicate with people from different backgrounds and different experiences different ages in life and it's kind of nice to put all that together and see how people learn and their growth during the 6 weeks of the class.

Ann stated that she is confident to move on through her entire program of study because of the support she receives from teachers,

> Right before we started this conversation now I was talking with a new professor. I was misunderstanding or misinterpreting his requirements for the class. He was happy to give me his number so that I could call.

Ann said that she had not had any collaboration projects in her classes yet. She is hopeful that the other team members are going to be helpful and pull their weight instead of relying on everybody else to put the project together.

Ann appreciates instructors who provide video lectures and PowerPoint presentations. Ann enjoys studying outdoors weather permitting. She uses a laptop in preference to a mobile app on her smartphone for homework and access to the discussion boards because it takes less time to use the laptop. She states that her experience with discussion boards is pretty good because "you get to know the other students by how they're responding."

Ann believes that there is an inconsistency among instructors in regards to how stringently APA format requirements are enforced in essay assignments in online classes.

> I've had a lot of essay assignments in my classes and the teachers all require the APA format, but the ones that are very strict about it being precise are the ones in the psychology department that don't understand that not all students are majoring in that area and unless Baker wants to do a mandatory class on APA format, I just don't see it changing. I was actually marked down because I used a contraction in my last essay instead of saying *do not* I put *don't* and my teacher said that's not proper APA format. . . . I think they should separate those classes for those which

> are requirements compared to ones that are for student Major and have maybe separate teachers and grade separately because teachers grade too hard on those students who are simply filling a requirement in their degree plan but it's not their major.

While studying, Ann states that she is easily distracted (about 40% of the time). "I get distracted easily. I think it's not a problem. Everybody needs to take a break and to refocus and sometimes that straying off the course work is exactly what I need." She uses research articles on the library Baker or the textbook as resources. However, she states that she is a slow textbook reader. Ann uses the Internet to seek answers to questions, but seldom "surf's the net" randomly. Ann feels timeliness grading and of providing the weekly assignment are an important area for improvement in online classes.

> Most of the time for seminar 1, we won't get it [the next assignment] until Thursday morning. If we could get it on Wednesday then should we finish the assignments for the previous week, we can start preparing for the next. My professors said that IT refuses to allow assignments to be given out ahead of time. I had one teacher whose work was due on Wednesday that wasn't graded until the following Monday and another assignment was due the next day so there wasn't any time to adjust after receiving the grade. She promised to post those grades on Saturday and meanwhile we were just waiting.

Bill.

Time management, I think that's key in online college when you work full time. I have four kids 6 and under; to manage my time is vital to attend online college.

This early career student works in information technology and is seeking a bachelor's degree to support career advancement and a move to the cyber security sector. Bill states that his academic success is supported in a lot of the IT classes that he's taking by the fact that they have online training sites like Microsoft labs. He also said "I did a Linux class and they had a lab setup at Baker where you could promote your code in SSH (a remote secure shell protocol) and we were "able to see stuff that really helped me with the hands-on" learning. According to Bill

that is how he learns best, by doing the actual tasks. Bill stated that he had only done a couple of actually in class classes, and that they weren't bad but that the learning experience he gets online works better for him. He remarked “I can understand how people would do better in a classroom but I think it depends on the class.”

Bill reported that he had not had any issues with the teachers at Baker. Although at a couple of other online colleges, teachers were not quite as interactive. “They just made you sign in then gave you a grade.” He stated, “I get a lot of feedback here. I really enjoy it because it helps me learn even more.” Bill described his experience with fellow classmates as positive overall.

> For the most part everybody maintains a professional tone in the discussion forums. I know it's hard. What you say and how you say it doesn't come across Online. You have to be very careful with your choice of words.

Bill reports that he enjoys his IT classes, but sometimes has a difficult time building enthusiasm for the non-IT classes. He stated “I like the IT stuff so I have to find a new way to look at other things to get myself motivated to get it done to the best of my ability.” His philosophy in college is that one has to find value in all classes because there's a reason each subject is included.

> I have a couple of classes, non IT classes. I don't really look forward to taking. I have actually just started one, cultural diversity. I try to keep an upbeat attitude about it and find a way to integrate it. It will be important in my chosen career field which I know. . . . You never know when you're going to come across somebody with a different background . . . got to just add everything in.

Bill stated that collaborative projects were one area where online classes lack a little bit in comparison to face-to-face classes with other students. He reported that his experiences with group projects were not completely bad, but that some people would not pull their weight and balance the workload. He said “Those of us who are striving for excellence have a tendency to

pick up the slack. ... I agree that people who slide in group projects in online classes have no consequences for the most part." Bill also restated that, for him, the most valuable technology in online classes was the labs with the hands-on practice with technical activities such as coding. He also stated that in the discussion boards he had received a lot of feedback from his fellow classmates that the online learning labs really helped them to learn as well.

As the father of several young children, Bill reports that he mostly must confine his study time to evenings.

> Typically where we' are now I have an office and I will start work once we put our kids down to bed about 7:30 p.m. I'll start my academic stuff till about 11 o'clock or 12 o'clock depending on how much homework I have. Sometimes if I have reading to do I go downstairs and then work in a more comfortable chair for the reading. No background noise no TV I'd like to focus on what I have going on in front of me.

As an information technologist, Bill reports that he is very proficient with both hardware and software. He uses his a custom-built desktop with two monitors, an AMD processor running 16 gigabytes of random access memory (RAM), and 2 GeForce GTX 980 video graphics cards One of them is usually full of text like a paper that he's typing and the other screen has his online class pulled up in the discussion for the research he is working on so he can read it at the same time. He also has a Linux laptop that he works on to force himself to really "get in the weeds" and learn how the operating environment works. In addition, he reports, "I actually have done some discussion board stuff on my phone as well with the blackboard app."

Bill feels that essay assignments sometimes get repetitive. "As I said I like the hands-on stuff but I understand the aspect of writing essays to show that you know the material that's covered in class. I do get it but it's just not my favorite thing to do." Bill stated that his mind seldom wanders off task while studying. "Five or ten percent of the time or so a link would catch my eye or else something I see while researching that will intrigue me enough to go off task. But

for the most part I would say 90% of the time I stay on task." Regarding the online resources, he uses in his studies, he reported that he looks first to the course textbook.

> If I can't find what I'm looking for in a textbook, then I'll go to Google. Google's pretty much the go-to site but you have to be careful about the links you're going to in Google to be sure that they are relevant and they have some substantial impact on what you're trying to find.

Regarding reading assignments, Bill reports that a lot of time he finds he's reading but not even paying attention to what he's reading. So he has to go back and read it again.

> The classes where I have a lot of reading, I just try to catch the main points depending on what it is, and then I focus on it a little bit more when I do my research for papers. Some of the references used in the courses are a little bit dated.

Bill and one of his coworkers have started using online computer based training, CBT Nuggets, to learn Python programming to supplement their technical skills outside of their online college classes. It is not required as part of their program of study. Bill also remembered," I used Khan Academy a lot when I was going back through the high school math courses like algebra for college." Bill believes that online class technology is slowly improving, however he is skeptical concerning the future possibility of employing virtual classrooms and real-time video collaboration technologies due to local time differences between participants.

Cris

When I look back on it it's very intense… It's not like when you see in the commercials with somebody in their pajamas doing it at their leisure. It's not that way. You might actually put more time into an online accounting class than into actually going to an on campus class.

This early-career student works in accounting and already holds a bachelor's degree. She is seeking further post-baccalaureate certifications to support career advancement and

compensation increases. Cris stated that she is a full time employee at Baker College and she takes advantage of her eligibility for tuition-free classes. “The only online class that I actually completed was the personal finance class.” Said Cris. “I attempted to do accounting concepts 241 after I had taken in the two pre requisite accounting courses on the ground. The accounting online, I did withdraw from it because I was not with it, just was not working for me.” Cris reported that taking each of the six-week courses she had attempted was stressful and difficult for her.

> It was actually, for me personally, the reason I'm not super excited about taking more of them, even though the finance stuff is interesting to me. I was just annoyed by how much I had to work on this class.

Cris recalled, “In lower level accounting classes, it was enough to read the textbook and then try to learn that way. With the new accounting material was not”. “So I tried again later with a personal finance class because I had a pretty good idea of the basics in the first place.” Cris found that the personal finance class was fun. “That's the one where I had my own life experience that I could correlate with the material.” Cris stated, “With the personal finance class it was just that it was so much in the 6 weeks every single day even though it was just 5 days a week. Just because of other things like working full-time, and there are a lot of other things. It's just a lot of time I bring into this.” Cris reported that her personal finance instructor gave the class helpful YouTube videos. However, the online accounting instructor (maybe he was new…) didn't give the class any supplemental resources for learning. There were not any sort of demonstrations or help. There was a complete difference between the two instructors. However, Cris said she felt that all online instructors have difficult roles to perform because they have to put in a lot of time consolidating reports of who logged in, who did postings, and keeping grades updated.

Cris reported that she had not had had any experience collaborating with other online classmates in projects. She stated, “Maybe I'm looking at it wrong but I think it's hard to collaborate in online (*classes).* I noticed in my online classes there wasn't a lot of it in the discussion board, and the reason they want your postings is that they want interaction.

> They want to post things all together on the same day as they want interaction. It wasn't really producing as much interaction everyone really just posted their own opinion on the article. I think we did have to respond one of the postings had to be a response. I don't think there's a lot of learning in those discussion boards it wasn't replacing a classroom discussion

Cris reminded the researcher that she felt the she is probably different than most of the people being interviewed in the survey.” I’m working on a post baccalaureate certificate. I only take at most one class per quarter. I don't take two classes per quarter. In my online classes, I was only taking one of the two 6 week sessions. I didn't have essay assignments in my online classes. I don't enjoy research. I'm not a retired person and I don't like to do research papers. That's one of the reasons for the post bachelor certificate in accounting. I don't like to do research papers.”

Regarding what resources she finds most useful in online classes, Cris stated “For finance I went back for my sources to a lot of different articles, and a dictionary with definitions of financial terms that I use over and over. It's on the Internet not provided by Baker College, the Investopedia.” Cris reported that studying for online classes is easy for her because she doesn’t have interaction with have children. She has a desk at home with a hard wired computer and she also has a laptop. So either she studies at the desk or in the living room with a laptop. She stated that there wasn't necessarily any particular time of day that she consistently devoted to studying. If she needed to be logged on sometimes she would just log in at lunch at work or other times after she returned home.

Cris commented that she seldom finds her mind straying off topic while studying. ”That personally doesn't happen to me because I use a planner, so that this is the amount of time that I'm going to do this, so it's easy for me. If I was younger or something it might be a little bit different, but it is not an issue for me.” Cris stated that she believes that the importance of reading textbook assignments varies by the type of class itself both in online and in on-ground classes. “Everybody's different in how easily they grasp what they read. If someone doesn’t need to grasp as much because of the nature of the assignment, you don't need to use the book as much.” Cris stated that she thinks that in the future, textbooks will be eliminated many online classes. “You won't have a textbook anymore; all you will use is reference material for online classes. Only online resources are current except if you're looking for historical information from textbooks.”

Cris commented that in the past whenever she thought of lifelong learning, as a definition, she thought of formal classes. However, her current definition is broader, “I use email and personal communication networks. I will listen to podcasts and whatnot of different things that interest me. I listen to the news a lot on the radio, that's my best way of getting news and information.”

> I have Twitter accounts but basically do news stuff rather than social stuff. I never use Facebook. I have an account but my friends know that they have to tell me to get on Facebook when I get an invitation, so I never look at it. I should get a LinkedIn account but I don't have one yet.

One of Cris’s suggestions for improving online classes was to improve teacher-student responsiveness by instituting mandatory office hours for all online instructors. She acknowledged the need for private communications in some cases, but she felt that reliable of office hours I would be very helpful. Cris also pointed out the difficulty of having students in different time zones all over the world. “They can't all be online 24 hours a day sitting by the

phone so the office hours have to vary because of the different time zones and different shifts that people work," she commented.

> Maybe classes could have more than one teacher and they could cover more time zones like a help desk. The help desk would be amazing . . . to really have answers 24 by 7. If you have a question you should be able to get an answer at the exact time that you raise your hand and ask the question.

Dez

When I'm sitting in my den at my study desk, surrounded by my books, I am happy and grateful for the benefits of studying and working from home

This late career student is in a transition for early retirement to a new career after 26 years of employment in the automotive business sector. She is seeking a bachelor's and subsequently a master's degree.

Dez stated that her academic success in online classes is due to her positive attitude. She also explained that she devotes a great deal of time to her studies. "I log on every day so that I'm not ever behind in the class. I respond to everything that is posted and do whatever it takes to make a good grade." She recalled "When I went back to school, I dedicated myself to the task of succeeding, so I have done very well." Dez stated that she looks forward to starting work on her master's degree when she graduates soon. "I doubled up on my classes in the last two quarters in order to finish sooner, I knew this would be challenging, but I am doing it successfully." "My mother wonders if I am becoming a professional student. My husband is supporting my educational endeavor" she explained. Dez commented that a recent class on cultural issues had a heavy workload of essays due every week.

> At first I thought the workload was too heavy, but as the class progressed I found that I could manage the work and I learned so much more from the instructor because I was investing so much time and effort in the class.

"I was happy that I was able to receive an excellent grade in this course" she said. Dez reported that she had always been a successful student. So when she found herself unemployed as a result of corporate downsizing after a 26-year career, she decided to take some online college classes. ("I'll be only the second sibling in my family to earn a college degree", she declared.) When she found how successful she was in online classes, she decided to devote full-time to obtaining her degree.

Dez reported that for the most part her teachers have been great. They have been very qualified in their fields and have given the students valuable knowledge and insights about their topics. In addition, she reported that overall, she has had very good experiences with classmates and she has developed long lasting friendships with some of them. A couple of times, especially in 2 person projects, she remembered that she has had to do more than her fair share of the work."

> I do this because I am a team player and I care about my own success. I don't blame my classmates when they are facing personal issues or have different priorities than I have. I won't criticize them for their differences.

She stated, "I love my online classes and I enjoy learning. I have a great sense of accomplishment from being an honor student. When I'm sitting in my den at my study desk, surrounded by my books, I am happy and grateful for the benefits of studying and working from home." Dez stated that she does not foresee any significant challenges to finishing her program of study. She is confident she will succeed.

Dez studies for her online classes using Dell computer which is dedicated to her schoolwork. Her desk is located in her den with a very nice view outside and is surrounded by all of the books she has ever used in her classes. "I don't use Facebook or twitter much, although I am familiar with them. (I had to set up a twitter account in a previous class)." She reported. She

thinks the use of personal devices and tablets is related to the age of the individual, with younger persons being the more "social media" generation.

Dez believes that the asynchronous text based discussion board is adequate as an online class format, "I have become an expert user of Blackboard in the last 4 years" she commented. "I like essay assignments and I love research" Dez explained. She is able to complete her assignments successfully using the college online library data bases and sometimes Internet websites. Dez reported that her mind seldom strays off task while she is studying. She is distracted almost 0% of the time she devotes to an online class. Dez commented that she always completes the assigned reading from course textbooks. "I read fast and completely" she said. While Dez is overall very satisfied with the technology used for learning in her undergraduate online classes, she mentioned that the use of online video might be beneficial to improve communication and student interaction.

In the in-depth follow-up interviews described above, AOCHS study participants described meaningful experiences and successful strategies that they employ to achieve academic success in online undergraduate college classes. Their responses, which adumbrate the factors that they felt contributed significantly to their academic successes, confirmed the researcher's conceptual model of AOCHS experience and also included several emergent themes (family and employer support) that were added to the researcher's pre-study model of effective learning in adult online higher education. They included a mature self-image and work ethic, effective management of time, effective workload planning, clear and timely communication with faculty members, positive collaboration with classmates, and fluent use of learning technology. These attitudes, strategies and activities may also be useful for other adult online college students who are struggling to achieve similar positive results.

Phenomenological Reintegration

A fundamental challenge to the validity of phenomenological research is that the preconceptions and biases of the researcher might influence his/her interpretation of the subjects' accounts of their experiences. The methodological defense to this threat is "bracketing" a researcher's awareness of his own experiences and the units of meaning identified by research respondents. They are kept apart from or held in suspension by the methodological practice of epoché. When the items held in epoché are assessed for any synthesis with the flagged data items collected from the respondents, the two states are taken through a reintegration (Bednall, 2006). In their responses to an online questionnaire, 93 adult online college honor students described their experiences as customers of online higher education. They described what they thought and how they felt about teachers, fellow classmates, and the technology they used for learning. They explained the strategies that they employed to overcome obstacles, and succeed academically. By careful qualitative analysis of their descriptions and reported experiences the researcher sought to identify common factors that contributed to their success.

As a retired information technology executive, having recently completed a partially online bachelor's degree, the biases of the researcher were reflected in this study's a priori conceptual modeling, the research design of this study, and in the bracketing interview. Now, having explored the lived experience of the study participants, the researcher can complete his phenomenological investigation by reevaluating these biases and preconceptions in the light of his exploration of the lived experience of AOCHS participants at a large regionally accredited not-for-profit college. While it is not certain that the results of this study would be reproduced in a different part of the world, or at a distant period in the future, it is anticipated that the results

would be repeatable in similar online higher education contexts including similar student and faculty demographics and technology infrastructure. While the results of this study may have limited generalizability to other geographically or demographically different populations, it is the hope of the researcher that the information from this study will be useful for improving online andragogical practice and suggesting valuable areas for future research in adult online higher education.

- This study confirms that some adult online college student participants still pursue their degrees in undergraduate classes employing asynchronous text based technology and late 20th century practices for instruction and assessment.
- This study confirms that, for AOCHS participants, communication and learning are more effective in sensory-rich computing environments providing multiple channels of information exchange through not only text, but also audio, video, and interactive functionality.
- This study confirms that academic success in online college is facilitated by a strong work ethic, good planning, and effective time management.
- This study confirms that best learning experiences incorporate presentation of relevant new information, clear and precise work assignments, useful feedback available on a timely basis, rewards for successful progress, and helpful, individualized support when needed.
- This study confirms that he best online teachers are successful at overcoming the lack of face to face interaction with students by building positive trusting relationships in the digital online learning context, and by not only assigning and grading schoolwork, but by actively encouraging student success.

- This study refutes the researcher's preconception that fellow students in online classes are seldom important contributors to a student's success. Although group projects and collaborative tasks are sometimes frustrating for honor students who take on disproportionately large shares of the work, positive, thoughtful dialog with classmates is often the most effective and enjoyable learning experience in adult online higher education.
- The results of this study strongly suggest that the most effective technologies for learning in online classes usually are available on the Internet rather than the IT infrastructure of the institution of higher learning that provides the class. Class templates, LMS, and traditional texts, while necessary, are insufficient for effective and compelling online instruction.
- This study confirms that, for AOCHS participants, the dichotomy of learning in the school world versus learning in the real world has coalesced into a single digitally mediated leaning experience that defines the student perceived "authenticity" of course work, the "real value" of learning outcomes, and the relative "pleasure or pain" of the adult online college learning experience.

It is the hope of the researcher that sharing these conceptual principles of AOCHS academic success may be useful for other adult online college students who are struggling to achieve similar positive results.

Summary

This study of adult online college honor student customer experience was based on qualitative thematic analysis of 93 online questionnaire responses and multiple case studies of 4 AOCHS participants enrolled in one or more online undergraduate classes. A literature review

served as the basis for a prestudy conceptual model from which research questions and associated areas of inquiry were developed. The data were analyzed by descriptive data reduction, axial coding of thematic references, and analytic induction in order to test and extend the theoretical model. The validity, reliability, and reproducibility of the results were supported by these qualitative methodologies, supplemented by the use of a researcher bracketing interview and pilot tests of the online questionnaire. An interpretive summary of the study with conclusions, implications, and recommendations is presented in Chapter 5.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations resulting from this study are derived from a rigorous exploration of the lived experience of adult online college honor students based upon 93 responses to an online questionnaire and 4 selected in-depth follow-up interviews. The goal of the researcher was to produce a rich but structured description of these lived experiences in order to create a theoretical model pertaining to the factors influencing online academic success. Both positive supporting factors and strategies for overcoming challenging contraindications to their success are included in this descriptive model. This chapter describes the researcher's model of AOCHS experience and provides the researcher's interpretation of meaning and significance of these findings

Discussion of Results and Conclusions

Although the participants in this study were all academically successful (based solely on the narrow selection criteria employed—membership on a current academic honors list), the descriptions of their experiences are richly colored by the emotional challenges, conflicting priorities, and disappointments that all adults face in everyday life. Frequently the addition of academic endeavors to the already full schedules of adult learners presents an insurmountable challenge; however, for AOCHS participants in this study, success has been possible. The lessons learned from their struggle are valuable components of the results of this study.

Interpretations of the results of this study and conclusions drawn from those interpretations are presented in the following discussion along with the theoretical and practical implications and limitations of this study.

How the Research Problem and Purpose Were Addressed

This study addressed a gap in the literature concerning how the technology and virtual context of adult online college education are perceived, interpreted, and employed by the most successful students in undergraduate online college degree programs**.** Important knowledge is not yet available concerning deep and meaningful learning experiences in online education. There is a need to understand how emerging digital technologies can be applied to online higher education environments to create deep and meaningful learning experiences for students.

The purpose of this study was to explore the experiences of adult online college honor students in order to identify important factors supporting honor students' use of technology in the online learning environment and develop a rich description of the phenomena associated with their success. The potential benefits from this exploration are the discovery of opportunities to exploit new technical learning capabilities and to enable deep and meaningful online learning for more of the students participating in adult online college environments. The findings of this study have contributed to the body of knowledge with data from 93 AOCHS study participants, an extensive literature review, qualitative analysis, and interpretation of findings. Key areas of inquiry, themes, and subthemes were described and studied. Theoretical models of adult online college education, communities of inquiry, topic-centered education, critical engagement, and knowledge generation were evaluated to determine consistency with observed data as a methodological strategy for building theory in the domain of adult online higher education. The results of this research, drawn from the experiences and knowledge of 93 adult online college honor students, provide useful insights into attitudes, motivations, and practices for adult online college students seeking to succeed academically.

Conclusions by Area of Inquiry

In the following section, quotations from study participants are used to support the conclusions drawn from the data. Unless explicitly attributed to one of the phenotypical interview participants (Ann, Bill, Cris, or Dez), they are attributable to AOCHS participants' responses to the online questionnaire. The archival source supporting these quotations can be found in the CSDb source files as searchable text (see Appendix L). In accordance with the confidentiality policy agreed in the IRB informed consent form (see Appendix I), the actual identifies of the participants are withheld.

Area of Inquiry A1 - Deep and meaningful learning (Coding Density 23%, 298 references). The researcher identified certain important personal practices that support AOCHS deep and meaningful learning experience. Time management strategies played a fundamental role in supporting the academic success of all of the study participants. Time management, for the purpose of this study, is defined as the prioritization of classwork over other competing activities. While Dez, as a full-time student, was not as limited in the number of hours per day she could apply to her studies, she doubled her course load to shorten her time to graduate. Bill, whose study time was very limited by work and family responsibilities, found that designating a specific time (at night after the kids are in bed) to his classwork. The opportunity to do classwork on breaks or during lunch hour at work was cited by both Ann and Cris as a contributory factor in their academic success.

Internal motivation facilitating self-starting was also a commonly referenced factor in academic success. A scholarly and academically successful self-image made dedication, consistent task completion, and attention to detail common behaviors among the study participants. As Dez reported,

> I am an individual who works hard to succeed in my education. I want to do well in every course so I make sure I put forth the effort to achieve that end result." A self-image based drive to do whatever it takes to succeed in class is an important motivation to invest adequate time, but what the AOCHS spends their time doing is equally important in achieving academic success. Good study habits, the well planned, organized, and timely completion of all assignments are fundamental components of academic success. "It is basically that you have to do the work assigned by a professor in the time frame given. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

Self-teaching techniques are also associated with academic access, "you have to give yourself the time and tools needed to learn and complete assignments on your own." Self-teaching is essentially conducting an exploratory conversation (ergodic dialog) with the topic of study or research. It is analogous to foraging for knowledge, describing an exploratory process of knowledge generation "wondering about things while wandering about the Internet", adopting an ambulatory strategy in reaction to the virtual context in which they pursue their quest for new knowledge. While an important part of the online learning experience, this self-teaching experience can often be frustrating.

> There are a lot of times where I feel like I am paying thousands of dollars and putting myself into all kinds of debt just to teach myself. I can teach myself without 400 dollar text books or paying for classes where the instructors only pay minimal attention to their online classes. It's important to note that those negative emotions are not frequent. They tend to pop up in really difficult classes where I am spending hours trying to find things that in any other setting would be covered by the text itself, or by a lecture or direct answer from a professor. (AOCHS Questionnaire, 2015, CSDb, n.p.)

AOCHS successful learning experience was based on a perception of the value of the knowledge to be obtained, the authenticity of the learning activity, and a strong goal orientation derived from self-motivation, maturity, a feeling of being respected as a person with perseverance and a strong work ethic. Their cognitive presence in the online class context was strengthened by a willingness to think differently and moderated by healthy cynicism.

> My age has also contributed to my success as I am wiser, more appreciative and more mature than I was when I tried to attempt college the first time around:

> when I was 18-20 years old. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

Area of Inquiry A2 - Critical engagement (Coding Density 36%, 467 references).

AOCHS described critical engagement in their online classes with four important groups; teachers, classmates, employers, and family.

The large number of references to teachers in the online questionnaire responses informed the researcher of the very high level of importance that teachers hold in the undergraduate higher education context. As a result of this study the researcher concluded that certain qualities are key requirements of the teacher's role, they include:

- **Helpfulness if asked**

> I asked a couple of instructors for help, one was outstanding I actually understood the material after he helped me and felt good about my grade. I had another instructor who I reached out to and he did not want to provide any assistance. I really do not think a teacher like that should be teaching (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

- **Active presence**

> There was one instructor that really made learning in the online environment difficult due to a lack of participation on his part in regard to all aspects, but all in all, all of my teachers have been very attentive and helpful (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

> The instructor I have this semester is the first that has been so visible in our discussion forums. There is no lapse or difficulty trying to keep the conversation going because my instructor is there and steering us the whole way. I have learned so much even though it's a lot of work, it feels great to come away with some real learning outcomes (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

- **Providing support, responsiveness, and commitment to student success**

> "Teachers were understanding when personal issues came up"(AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

- **Communication of clear tasks and schedules**

"There is some frustration if there is an assignment that I am not clear on" (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

- **Expectations of students**

"It's important to immediately get to know your instructor and their expectations" (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

- **Practices of instruction**

[Some teachers] just seem to record grades but offer no real contribution to the class and my learning. Sadly, I can recall only about 10 teachers so far that I have felt really took the job seriously, participated in discussions and truly seemed invested in students learning. They were harder teachers and grades, but it was a more meaningful and enriching environment. It is frustrating when you feel like someone is just earning a check for facilitating a class when you are working quite hard on a class and spending a lot of time involved (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

- **Grading equity and feedback**

"I always wondered what type of grades my classmates were receiving for what looked like, little effort" (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

- **Teacher qualifications, competence**

"The teachers … all come with high credentials and degrees. They are professionals in their area of expertise" (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

- **Friendliness**

"Most (online teachers) were friendly, one was not and I dropped the class" (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

- **Passion for the subject**

One of the best learning experiences I had was with an instructor who was truly passionate about the subject, and really cared about the students understanding the concepts being taught. I was able to learn and understand the course material, and I still have a good understanding of those concepts years later (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

- **Consistency of rule enforcement**

> "It would be helpful if there was a standard rule on posting requirements" (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

- **Understanding of factors that affect students' lives**

> I felt that overall, the instructors were disconnected with the students… Several of my instructors, particularly those that appeared to be more academically based than life-experience based seemed colder and less engaging. Another way to put it would be to say they were more clinical and treating their class as the only one that matters and that your life revolves around school and not life or a career or family. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

AOCHS engagement with fellow students is frequently positive and mutually supportive. Important negative factors affecting engagement with classmates in discussion boards were problems with the quality of their work. There are also commonly encountered problems of inequitable contribution levels to the work required in collaborative group projects.

> Some are working their tail off to get through work, school, and family life; these people are a joy to work with and I do not know how they manage to keep everything straight in their life. Others are very lazy especially when it comes to spell-checking work, checking the rubric to make sure they have satisfied the requirements of the assignment, and not participating in group projects. There is a very wide difference between these two groups. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

Enforcement of a code of ethics ensuring professionalism and courtesy among online classmates facilitates effective learning and supports the formation of lasting friendships in some online classes.

The AOCH student's employer's role in his or her achievement of critical engagement in online classes is defined by the combination of demands on and support for provided. The time demands of employment can sometimes be in conflict with the time demands of class assignments and deadlines, however policies that allow school work to be done in the workplace on breaks or lunch hours and financial assistance with tuition costs provide valuable support for

academic success. “For every A I received, my employer paid 100% tuition assistance, where a B would be 80% and a C 50%. That was a motivator in being able to achieve all A's” (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

The family of the AOCH student also has a significant effect on critical engagement though a combination demands and means of support. The unpredictable and frequently urgent responsibilities and obligations of parenthood are often in conflict with the work demands of class assignments and inflexible deadlines.

> I think that the school should recognize that people work and have families and it is not a lack of doing the work, but we all have lives and things do happen. Example: had a paper due, I was working on the final touches and got a phone call that my son was in an accident and taken to the hospital. I did not get back home until after 11pm (emergency rooms take a long time) this is my first assignment in my college years that I had not turned in. I was very upset. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

However, the support and encouragement of family members can be a fundamentally facilitating factor in academic success. “I also am blessed with a very supportive family when I take my computer with me camping to do my homework” (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

Area of Inquiry A3 - Learning Technology in OL Classes (Coding Density 18%, 228 references). Analysis of the data from this study supports the conclusion that technology employed in online higher education classes creates a context which facilitates learning through critical engagement of the students and teacher with the topic of study. There was strong agreement among AOCHS study participants that a fast and reliable Internet connection is absolutely necessary to successfully complete online classes.

> The Internet is the biggest key to learning and success in the online classes. I can access my class from my smartphone, tablet, or typically my laptop and be able to interact and complete work for class. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

As the direct online student user interface, the LMS is the most significant and visible component of this virtual context. Online student collaboration can also be supported and effectively assessed using the discussion boards and WIKI based components of many LMS's and problems with the functionality or reliability of these systems negatively affect AOCHS success.

> I suppose Blackboard was the most important tech in my online classes. Really, it was the only tech we used, so please don't take that to imply that Blackboard was working in a high-quality, user-friendly fashion. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

Online library resources and educational database subscriptions are described as very important for effective learning in association with research-based essays and collaborative projects. However, some AOCHS feel that using college library resources is cumbersome and confusing compared to free publically available resources such as search engines, encyclopedias, and educational websites. "I employed much google-fu while in my online classes. I supplemented this with my textbook, and if absolutely necessary, the online library databases" (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

Expertise with the use of standard office software, including document processors, spreadsheets, and email as an import factor in supporting academic success.

> When taking online courses, it is inconvenient to travel to the physical library on campus, so a complete online library is essential for me. High speed Internet and a computer with Microsoft Office is also key, as nearly all assignments are turned in via a Microsoft document. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

In addition, interactive online laboratories and simulation websites were reported to be very effective in facilitating learning in subject areas where quantitative computation or coding skills must be developed through practice.

> The best online experiences I have had are all working with online labs. Since I am an IT student using virtual labs to see how things work and figuring out why is my favorite way to learn. Writing papers on a weekly basis get boring and adding in labs keeps things different and fresh (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

The presence and availability of information in the online class environment is an important predictor of effective learning. Whether it is cataloged and distributed by the instructor or discovered in the Internet by the student in search of authoritative and scholarly reference material, relevant information is the source and raw material for the knowledge generation supporting deep and meaningful learning in online college classes.

> I do a lot of searching online looking for explanations, real world examples and on things like Google Scholar. Additionally, YouTube has proven to be a great resource for explanations and examples how to do different things from programming to math classes (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

Online and on campus support organizations, including technical support, library services, academic advisors, tutoring services, and internship and employment services also were cited in respondents' lists of important factors supporting their academic success.

Area of Inquiry A4 - Learning Technology Outside of Classes (Coding Density 10%, 125 references). AOCHS use their personal computing devices, mobile smart phones, tablets, and calculating devices for learning in online classes as well as day to day activities associated with social interaction, business, and recreation. For many AOCHS, the search for and the discovery of novel or previously unknown information is an integral part of their online learning process.

> I love the Internet. I am always "googling" something and have no problems learning from what I find on the Internet. I think that technology helps with the different types of learning that each one of us have and is a vital element in the learning process whether it be personal or for classwork (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

Among the important Internet applications, sites, and services used by AOCHS are; email, YouTube, industry newsletters, news and current events websites, audio books, cloud backup, podcasts, Wikipedia, social media sites, blogs, online magazines, analytics tools, online retail, online entertainment, online dictionaries, webinars, and video conferencing services.

Approximately 10% of the AOCHS respondents stated that the meaning and intent of this question "What technologies do you use for learning outside of your online classes?" was unclear, suggesting that there is no distinction between learning in an online higher education context and learning in real life. The devices, the processes, and even the Internet applications, sites, and services used by AOCHS are equivalent in either context.

Area of Inquiry A5 - Suggested Improvements in OL Classes (Coding Density 13%, 163 references). While many AOCHS respondents experience pleasurable and effective learning experiences while participating in the online discussion boards, the response database contained many suggestions for improvement in these text-based asynchronous, semi-structured, learning environments.

Arbitrary criteria imposed upon participants in the grading process imposed unnecessary and onerous conditions that negatively impacted effective learning. For example, the requirement to post topic-related comments and engage in substantive dialogue with fellow students on at least 5 days of every week was thought by AOCHS to be arbitrary and not an authentic criterion for assessment of the quality of their participation or the effectiveness of their learning experiences. It was suggested that the minimum number of posts required per week should be changed to a minimum of two, and that grading should be based on more legitimate criteria such as effective engagement with others in reviewing the study material provided, engaging in courteous and

professional debate of issues, and contributing fresh new perspectives and authoritative outside insights from outside research into the dialog.

> I would lower the amount of required posts needed for participation. I strongly believe if the requirement was based more on the knowledge learned and the resources cited, individuals will gain more learning. The required minimum of 2 posts each of the 5 days at times felt like "fluff" and was only being done to earn the points (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

Just as they strongly stressed in their description of experiences with teachers in online classes (*A2 Critical engagement*), AOCHS feel that they learned nothing from teachers who fail to take an active participatory role in the online discussion boards. Conversely, AOCHS reported that teachers who provided praise for students producing good work and encouragement for students producing weaker work, were not only more effective, but also much more interesting and engaging.

> I have had a handful *(of online teachers)* that were very good and engaged with the class. However, overall online teachers tend to be of little or no use at all. Most do not participate through blackboard to the level that they expect their students to. They use the excuse that the discussion boards are for the students to help each other learn which is laughable. I get the distinct impression that many online educators simply take it as a way to make extra money on top of their day jobs and don't give it the attention that they would a regular class. It's important to note not all of them are like this. I have been lucky enough to have a few truly excellent online professors who were clearly passionate about online learning and the difference between those few classes and the rest we like night and day (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

In addition to active presence in the discussion, AOCHS respondents commented frequently on the importance of the teacher's responsibly to ensure that the boundaries of the discussion were set optimally for effective dialog. A commonly cited example was the case where the few discussion questions provided for the week were answered by the first few posts, leaving nothing more for students to write about. It is the responsibility of the teacher to provide adequate topic

related discussion material to support useful dialog and effective learning experiences throughout every weekly online class session.

> The best online learning experiences I have had are ones where the instructors are as engaged with students as fellow classmates. It is hard to be successful when teachers do not include enough content for students to learn and discuss. Students need more direction at times for discussion boards when many instructors simply expect lengthy discussions without giving any topics to respond to (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

In addition, many AOCHS learn best while engaging individually in Internet research concerning interesting aspects of the study topic, and enjoy contributing material from authoritative, scholarly sources into class, however, they felt frustrated when teachers failed to respect and give credit for their own original comments and ideas.

> Most of the teachers are great. They are very helpful and are willing to help you if you just ask. I have had some teachers who are less favored in their teaching style. They follow Baker's rules to a 'T' in the strictest way, which makes everything harder on the students…. For example, in a psychology class the teacher expects for you to have a reference for everything you post or type for homework. She does not believe that a person can have an original thought (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

The best online class learning experiences for AOCHS are challenging and require significant time and effort to complete. However, the relevance and value of the new knowledge they obtain provides an excellent return on their investment. The teachers in exemplary classes frequently enhanced the vitality and realness of the topic by providing rich sources of information such as video lectures, relating real life experiences, and encouraging students to maintain a healthy level of cynicism balanced by willingness to think differently as their knowledge increased.

> When we are able to incorporate real life experience with our learning class members seem more engaged. I also feel it relates back to how involved the instructor is on how involved class members are as well. At times I have disagreed with what a classmate has said in a post and it has allowed us to have a

> good conversation to express our opinions without feeling attacked (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

AOCHS expect timeliness and consistency of grading and assessment in online classes. They favor formative assessment, in which feedback is made available to the student in time to support performance improvement. They reported instances when inadequately detailed feedback made it impossible to understand the reason for a low grade, in these situations they felt frustrated and unsupported in their efforts to make their best effort.

> I would hold all teachers accountable to what they tell their students. For example, if a teacher says they will normally post grades by Saturday and then doesn't until 8pm on Monday, it needs to be addressed (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

Time intensive textbook reading assignments add little or no value when the core course material is contained in supplementary materials such as PowerPoint presentations and lectures from the instructor. E-book alternatives to expensive paper textbooks might provide a better resource for online learning. Some AOCHS suggested that the expensive textbooks that are required in some classes should be used more effectively or eliminated.

> I would encourage the instructors to structure the courses around the textbook, which should be relevant to today. This way if the instructor is not available, the student knows that the solutions can be found. Give students additional help by creating lecture videos based on examples of the homework. Some students are visual learners, and have a hard time picking up concepts through text, especially if it is outdated (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

AOCHS have the best online learning experiences in classes where the teacher is actively present and engaged in the class discussions as a fellow learner. Instructors whose love of learning is evident in their tone of communication, and whose self-confidence allows them to place the topic at the center of the learning experience are highly valued by AOCHS and cited as great teachers.

Implications for Theory

The AOCHS participants in this study were randomly selected based on the single specific criterion of selection for an honors list for the previous academic quarter (Winter 2015). Therefore, the sample could have included a wide spectrum of adult undergraduate students of varying academic abilities, aptitudes, and histories. Participants ranging from below average students who achieved their first ever 3.0 quarterly grade point average to exceptional scholars with lifetime 4.0 grade point averages were potentially included. The experiences they relate, combined with data from other scholarly sources, and recent research, indicate that there may be a set of important common factors supporting their success and/or opposing their educational efforts. By careful qualitative analysis of their descriptions and reported experiences the researcher found that several common factors contribute to their success. They included a mature self-image and work ethic, effective management of time, effective workload planning, clear and timely communication with faculty members, positive collaboration with classmates, and fluent use of learning technology. If these common AOCHS experiences can be understood and applied to theory, then helpful formative actions might be applied in practice.

The foundational concepts for this study include TQM philosophy, theoretical contexts for knowledge generation, and the CoI framework for online education.

Total Quality Management in Adult Online Higher Education

Many old, elite institutions (not only academic, but also financial, medical, and governmental) have historically maintained quality through stubborn resistance to change. Evolving information technology is proving itself to be an irresistible agent of revolutionary change for all of these organizations (Christensen & Raynor, 2003).

The changes occur from the bottom up rather than top down, insidious reactions to competition rather than strategic executive initiatives. As adult online college leaders assess their performance and develop strategic plans for success and growth in the coming decade, they face a declining rate of enrollment, changing student demographics, and new requirements from industries for which they supply graduates. In order to be successful, adult online college Organizations must adopt a student-driven approach based on cooperation among stakeholders and a never-ending cycle of continuous improvement. Although they were first formulated for a business manufacturing environment, TQM principles apply effectively to the operation of Adult Online Institutions of Higher Education in the same way that they do in the management of any computer-mediated online business. The total quality management philosophy focuses on continual improvements in product and service quality through reducing uncertainty and variability in design, manufacturing, and service processes (Deming, 1986). Deming did not prescribe a specific quality improvement program for organizations. His goal was to change entire perspectives in management, often radically. “Some business managers have criticized Deming because his philosophy is just that: a philosophy” (Evans, 2010, p. 103). Deming's management philosophy developed and evolved as he pursued a career in academics and industrial consulting with a lifelong passion for learning. In Deming's view, variation is the chief contributor to poor quality. According to Yoshida (1994), customer dissatisfaction is more driven by the range of results than average results. Processes producing highly variable results disappoint many more customers than low variation processes in spite of higher average quality levels. This important quality management principle is simply that the customer “feels” the standard deviation, not the mean of any production process. Similarly, high variability in student performance levels results in higher failure rates and lower student motivation.

The participants in this study candidly described their lived experiences as academically successful consumers of online higher education. As capable and proven students, they want to a challenging and compelling learning environment. They are happy to work hard in order to succeed. And, very importantly, they want their efforts to be recognized and their hard-won educational credentials to be respected by potential future employers.

> This is college and we should be held to a high standard for our work. A degree earned without a fair amount of effort is merely paper and if the institution earns a reputation for being 'easy' then that makes it almost worthless. I want my effort and personal sacrifices to mean something and I don't want to be embarrassed to tell someone where I went to school. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

AOCHS Pursue Quality through Reflective Learning Practices

The findings of this study confirm that AOCHS frequently plan their online class activities, setting up calendar entries for assignment due dates and discussion participation. They are especially likely to formally plan academic quarters in which they are enrolled in multiple classes which sometimes have conflicting requirements, such as two different research papers due in one week. Having planned and balanced their workload evenly across the quarter, they perform their research and report writing in the most orderly and unhurried circumstances possible. After having submitted assignments, they depend on their online instructor for a prompt and predictable assessment of their work. Not receiving a prompt grade can deny them the feedback necessary to improve their work or sustain a high grade on subsequent assignments. The student–teacher feedback loop is similar in function to the Deming PDSA cycle (see Figure 1). By employing an innate continuous improvement process in online classes, AOCHS seek to adjust their efforts to match the instructor's expectations, thereby ensuring academic success.

In Adult Online Education learning environments, Deming's system of profound knowledge (2000) consists of four interrelated parts: appreciation for the system, understanding variation,

theory of knowledge, and psychology. The components of any system of production must work together if the system is to be effective. Deming suggested that management first understand the causes of variation, and then work to reduce variation through improvements in technology, process design, and training. Causes of variation stemming from the designed-in dynamics of the organization's system of operation are management's responsibility. In order to optimize the system, managers must understand the process components and cross-functional boundaries and align them toward a common vision or goal.

> The theory of knowledge teaches us that a statement, if it conveys knowledge, predicts future outcome, with risk of being wrong, and that it fits, without failure, observations of the past. Rational prediction requires theory and builds knowledge through systematic revision and extension of theory based on comparison of prediction with observation. (Deming, 1994, p. 102)

One of the important implications for adult online college education arising from this study is that, in today's technology-permeated world, there is no longer any significant difference between the knowledge generation process in adult online college classes and the learning processes in their outside of class experience. When asked to describe the technology that was important to support their learning in both inside and outside their online classes, most respondents stated that they used the same hardware, software, and network in both. Approximately 10% of the AOCHS respondents stated that the meaning and intent of this question was unclear. Their response suggested that there is no distinction between learning in an online higher education context and learning in real life. The devices, the processes, and even the Internet applications, sites, and services used by AOCHS are equivalent in either context. As emerging technologies blur the historical boundaries between physical and virtual presence, the norms for higher education delivery are simultaneously evolving toward greater integration of

online content into on ground classes and more real-time, synchronous collaboration among online students and instructors.

Kolb (1984) stated that when learning is conceived as a holistic adaptive process, it provides conceptual bridges across life situations such as school and work, portraying learning as a continuous, lifelong process. “this perspective highlights the similarities among adaptive/learning activities that are commonly called by specialized names-learning, creativity, problem solving, decision making, and scientific research” (1984, p. 34). Online learning is no longer simply a molecular educational concept but rather a comprehensive concept describing the central process of human adaptation to the social and physical environment.

In institutions of adult online college education, as in any competitive business, each part of the organization must compete for scarce resources and will be tempted to optimize its individual performance without consideration of the overall organizational value creation process. Instead, administrators, teachers, and facility support functions must seek to optimize the value created for students and the communities they represent. Sub-optimization (doing the best for individual components) results in losses to the overall system. The institutional goal of optimal student success will not be attained when instructors are unwilling to invest time and resources beyond the minimum required administrative tasks, when students are unwilling to engage in thoughtful, knowledge-generating dialog and collaboration, or when the technology impedes reliable access to an online class and the information resources upon which it relies.

Deming (1986) acknowledged that individual people differ psychologically. However, most people have innate needs for love, dignity, and self-esteem. Situations that fail to fulfill these needs smother intrinsic motivation. An effective online instructor must be aware of human differences and work toward optimizing each person’s unique abilities and contributions.

Effective adult online college instructors should also understand that students learn in different ways and at different speeds, and manage the online classroom environment to accommodate these diverse learning dynamics. If students do not derive satisfaction from their learning experiences, they will be less productive and successful.

> Give students additional help by creating lecture videos based on examples of the homework. Some students are visual learners, and have a hard time picking up concepts through text, especially if it is outdated. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

In order to optimize effectiveness, online faculty must continually renew their technology skills. They must develop effective new approaches, and revise outdated ones. Professional development and training for faculty members increases morale and demonstrates that the online institution is sincerely dedicated to supporting its faculty and staff members by investing in their future. For the faculty and staff, the value proposition is the acquisition of marketable technical skills in a job market experiencing attrition as manual human labor is continuously replaced by automation. This also fulfils the institutions' responsibility to support the long-term success of current employees whose positions will no longer be filled as technology based staffing efficiency initiatives are implemented.

A fundamental precept of TQM philosophy declares that the aim of any organization should be for all stakeholders to benefit over the long term. Providing the optimal combination of high-quality instruction, student participation, and technical resources can only be achieved when the entire organization is managed for optimal student-perceived quality in learning experiences.

Improvements in these adult online college student experiences have the potential to yield an excellent return on investment of resources. The most effective online college institutions will develop best practices of operation that employ evolving technology to offset the decreasing demand for new graduates with more cost effective instructional processes, reducing failure

rates, and producing precisely qualified candidates for the careers of the future. Deming (1994) believed that businesses should not exist simply for profit; they are social entities that must take responsibility for providing jobs by improving the firm's competitive position. An online institution of higher education can achieve and sustain a higher market share by providing a higher quality learning experience for its students.

Quality Improvement in Online Learning

In the adult online college education environment, high variability in student performance levels results in higher failure rates and lower student motivation. In an online academic context, grading students' work is essential, but does not add value to the educational product. Inspection should be used as an information-gathering tool for improvement, not as a means of "assuring" quality or blaming students who fail to meet certain assessment criteria. AOCHS prefer formative assessment, in which the feedback is available to the student in time to support continuous performance improvement. By understanding and seeking to reduce the causes for variation in student performance, online institutions of higher learning can eliminate unnecessary, non-value-added costs caused by attrition and class repetition. The results of this study indicate that each of three major components of the online higher education environment described by the participants have opportunities for optimization.

Online instructors who fail maintain an active presence in class discussions, who are unresponsive to student emails or phone messages, or whose communication style toward students is arrogant, condescending, or simply rude are perceived as much less effective than teachers who actively participate as fellow learners, praise, and encourage their students.

> I would try to make sure the instructors know about online etiquette. I've come across a number of instructors who have made me unhappy because their response comes off with a rude vibe. I often try to avoid contact with them because of this. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

Students who put forth only minimum effort, who fail to contribute their fair share to collaborative class projects, or who fail to engage with others in positive, thoughtful dialog are less effective than their more conscientious, studious, and amicable classmates.

> Those of us who are striving for excellence have a tendency to pick up the slack. ... I agree that people who slide in group projects in online classes have no consequences for the most part. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

And online class information technology which is unreliable, cumbersome to use, outdated, and mired in draconian security policy is far less useful than the state of the art, rich, open, mobile, and socially aware information infrastructure currently in use throughout the public world of social media and Internet commerce.

> I suppose Blackboard was the most important tech in my online classes. Really, it was the only tech we used, so please don't take that to imply that Blackboard was working in a high-quality, user-friendly fashion. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

Knowledge Generation in Online Class

The results of this study support the theoretical proposition that the processes of collaboration, socialization, and internalization of knowledge in online classes are key aspects of the AOCHS's deep and meaningful learning experiences.

> I have found that I have learned as much from my online classmates as the instructors in certain cases. For example, there have been several instances where some of my fellow classmates actually are working in the particular field of study and have been able to lend some real world experience in addition to the instructor's input. I find those contributions to be invaluable. It is interesting to note as well the variety of opinions that are expressed without any discrimination. That helps me to better understand everyone's viewpoint. I have never had a cross word or negative conversation with anyone in this online environment. (AOCHS Questionnaire Responses, 2015, CSDb, n.p.)

In adult online college educational environments, not only students, but also faculty and administrative staff participate in the sharing of information and generation of knowledge. The central thrust in Knowledge Management (KM) in the adult online college education context is

to capture, organize, and make available the course subject information and the knowledge of the faculty, so that knowledge can be acquired by students. The scope of KM in the 21st century has expanded to encompass the whole landscape of information and knowledge likely to be useful to the institution, including knowledge external to the organization. This includes knowledge from vendors and suppliers as well as traditional knowledge originating in the scientific and scholarly community. As adult online college education has evolved to make the application of computer technology infrastructure fundamental to its success, KM now applies as a way to understand how to enrich learning through the acquisition, distribution, and creation of knowledge in online classes.

Knowledge Management is an intelligent organizational function by which raw data are gathered and organized into information elements. KM processes transform these information elements into knowledge. Data residing in the memories and experiences of the students, faculty, and administrative staff, in the organization's datasets, file servers, Web pages, e-mail, and other systems from all structured and unstructured data sources are integrated and can be accessed through a personalized portal interface. KM is the process through which organizations generate value from their intellectual and knowledge-based assets.

KM activities also protect intellectual assets from obsolescence and decay, provide increased organizational flexibility, and underpin institutional intelligence. This means, for example, creating supportive organizational structures and maintaining student information portals, learning management systems, and supporting infrastructure for the generation and effective distribution of knowledge. KM complements and enhances other organizational initiatives such as total quality management, competitive student recruitment, and faculty development, essential tools for sustained competitive success.

The evolving use of computer technology has also created the need for new strategies to organize and convert very large amounts of information into knowledge. An important concept of KM theory is Nonaka and Takeuchi's description of "tacit" knowledge and how to discover, cultivate, and convert it into organizational knowledge (Nonaka, & Takeuchi, 1995). In the KM context, knowledge is most commonly categorized as either explicit (documented) or tacit (residing in people's heads). Nonaka and Konno (1998) defined the Japanese concept, "把, *Ba*, a holder or a container", as a context where knowledge can be created, shared, and utilized. Nonaka and Toyama (2003) employed *Ba* to describe a shared space for knowledge generation through various stages of conversion. This space can be physical (an office, a classroom), virtual (email, a teleconference, an online class discussion board), mental (shared experiences, ideas, ideals) or any combination of these. *Ba* provides a platform for advancing individual and/or collective knowledge. They suggest that putting tacit knowledge into play might be useful for online communities as *Ba* could support transfer of knowledge by encouraging individuals to share each other's knowledge and construct their own knowledge through socialization, externalization, combination, and internalization. Therefore, creating a *Ba*-like environment could provide an opportunity for online students to engage with each other in more meaningful ways.

Swan (2005) suggested that learning is essentially a social activity. Meaning is constructed through communication, collaborative activity, and interactions with others. Social constructivism in online education contexts "highlights the role of social interactions in meaning making … [*and*] knowledge construction" (p. 5). Therefore, tacit knowledge sharing is critical because it provides many opportunities for collaboration and situated learning to occur. Over the

term of the online class these opportunities combine to support a virtual space in which individuals can share their expertise and knowledge.

Integral to these transformations of knowledge through the knowledge spiral is that new knowledge is being continuously created. By transforming tacit knowledge into explicit knowledge, for example, a student is able to capture the expertise of other individuals, thus expanding the total organizational memory. Insights gained by learners during the metacognitive processes of knowledge generation allow double loop organizational learning to take place (Wickramasinghe, 2006). Processing explicit knowledge requires "collecting" KM methodologies, and alternatively, processing tacit knowledge requires "connecting" KM methodologies. "Converting" KM processes, for example demonstrations, assessments and debriefings, are useful processes for transforming implicit tacit knowledge into explicit knowledge.

The online discussion components of many online higher education classes involve a community of interacting students with different backgrounds and mental models. While some students may focus on technical concepts, others are interested in social or political issues. Only some of these different perspectives, mental models, motivations, and intentions can be expressed easily in explicit language without careful self-conscious reflection. Both socialization and externalization are necessary for linking class members' tacit and explicit knowledge. Thus, the collaborative socialization process of sharing tacit knowledge through positive discourse is required the generation of group and individual knowledge.

The result of these transformations of knowledge through the knowledge spiral is that new knowledge is being continuously created, thus supporting the learning process. By transforming tacit knowledge into explicit knowledge, for example, a student is able to capture

the expertise of other individuals, thus expanding the total organizational memory. Nonaka and Takeuchi's (1995) SECI model contains suggested processes for cultivating and facilitating knowledge generation that are relevant in an online community of inquiry. Nonaka and Toyama's (2003) SECI model of knowledge generation is also useful for describing online the college learning context. Information transfer channels between teacher and learners, and between the course content and the learners control the pace, format, and flow of the information upon which the knowledge generation process subsists. Information transfer and conversion are the enabling processes for the development of knowledge. Increasing the bandwidth or throughput of information transfer interfaces results in faster and broader development of knowledge. In a single generation, the technology used to support distance education has evolved from paper, envelopes, and postage stamps in "correspondence schools" to Gigabit interactive audio video instruction and collaboration infrastructure.

One important practical approach is operationalizing individuals' tacit knowledge. In the context of an online community, this tacit knowledge is defined as each individual member's expertise, professional history, and personal research interests. Sharing this tacit knowledge could help to create an online learning environment where individuality is supported, and simultaneously, a sense of community is fostered. Knowing who their peers are and what kind of expertise they have, students could more easily better sense of the discussion as they transfer the outcomes of learning into their professional practices while regulating their own learning process (Lave & Wenger, 1991).

To form an online learning community, therefore, trust must be created and sustained by the members of the community (Oztok, 2013). The extent to which this trust and belonging can be created depends on the community's shared processes for managing online identities and

developing social capital. Students' individual's attitudes, personal motivations, and expectations for the online course affect their level of commitment to their online community. However, in the end, each student's personal commitment to the class as a knowledge generating community of inquiry, "completely depends on the extent to which individuals would like to reveal and share their tacit knowledge since that knowledge is privately held." (2013, p. 31).

The findings of this study confirm that AOCHS have found ways to exploit the knowledge spiral process to achieve academic success in online discussion boards. By submitting thoughtful well researched comments, and responding positively to their classmates' posts, they not only earn participation points, but also support cycles of conversion of tacit knowledge from class members' experience and personal perspectives into explicit, shared class consensus and understanding of the topic. When the teacher actively participates as a fellow learner in a topic-centered community of learning, the knowledge spiral is most effective as a mechanism of knowledge generation. Oztok (2013) argued that online class activities that reveal each individual class member's expertise, professional history, and personal research interests facilitate *Ba* creation and enhance knowledge generation.

In adult online college classes, the success of members' participation in the knowledge creation process depends strongly on how well they perceive and interrelate with each other, reveal their thoughts and emotions to each other, and achieve synergistic syntheses by revising individually held preconceptions and incorporating new community-generated ideas.

Community of Inquiry Model of Online Higher Education

According to Garrison, Anderson, and Archer (2000) student participation in a community of inquiry is a valuable process for cognitive development because the student's participation supports his or her future success in the workplace, where collaboration skills are highly valued.

According to Rourke and Kanuka (2009), the central indicator of a successful online learning experience, deep and meaningful learning, is defined as "the critical examination of new facts and the effort to make numerous connections with existing knowledge structures," contrasted with surface learning, which is simply "the uncritical acceptance of new facts and ideas" (p. 24). Current growth in demand for adult online college education presents unique opportunities to exploit emerging technical capabilities that enable deep and meaningful learning.

The CoI, a framework for online educational practice proposed by Garrison et al (2000), conceives a tri-modal model of processes supporting instruction and learning consisting of interrelated but separately definable phenomena, which they called "presences." In the CoI model, the effects of the presence of the teacher, the fellow students, and the student himself or herself each play an essential role in creating the critical engagement necessary for sensing, assessing, and integrating new information. This critical engagement process supports deep and meaningful learning, which is defined as "the critical examination of new facts and the effort to make numerous connections with existing knowledge structures," contrasted with surface learning, defined as "the uncritical acceptance of new facts and ideas" (Rourke & Kanuka, 2009, p. 24).

In the researcher's prestudy review of literature pertaining to CoI in online learning, two additional, emergent "presences" were noted, information presence and technology presence. The results of this study support the extension of CoI theory to incorporate these presences in the AOCHS's deep and meaningful learning experience.

Information Presence (Ergodic dialog)

Palmer (2010) describes an ideal learning community as a community of truth, in which the teacher's central task is to give the subject itself an independent voice. "When the 'great thing'

speaks for itself, teachers and students are more likely to come into a genuine learning community, a community that does not collapse into the egos of students or teacher but knows itself accountable to the subject at its core" (p. 120).

The "great thing" at the heart of an adult online learning community is both the goal and the path toward the goal. The "great thing" in the middle of topic centered online education is not a collection of facts, or a store of static knowledge, or some set of skills. It is a dynamic, evolving concentration of shared meaning. The "great thing" at the center is more than simply knowledge transferred from the brain of the teacher to the brains of the students. It is also more than knowledge generated by or transferred to the students. As digitally enhanced participants in andragogy, the teacher and students can connect and integrate the conceptual realities residing in not only their biological brains but also in their "cloud-based," digital, brain extensions (agents and data stores). The memories, memes, biases, values, assumptions, images, sounds, sensations, and sentiments they share and discuss can coalesce into a newly born instantiation of the "great thing" at the center of their class. Sentience is not simply self-awareness. Sentience is also the emergence of intentionality. Sentience is an integral condition of Information's being. Instances of sentience constantly evolve wherever information is perceived and integrated with experience. The World Wide Web is a virtually infinite network of labyrinths through which learners navigate. It responds to their inquiries and choices, transaction by transaction, by altering the direction and possible destinations of their knowledge seeking journeys.

> I love the Internet. I am always "googling" something and have no problems learning from what I find on the Internet. I think that technology helps with the different types of learning that each one of us have and is a vital element in the learning process whether it be personal or for classwork (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

The concept of cybertext focuses on the mechanical organization of the text, by positing the intricacies of the medium as an active part of the information exchange. The performance of a textbook reader takes place all in his head. However, “the user of cybertext also performs in an extranoematic sense. During the cybertextual process, the user will have effectuated a semiotic sequence,” by constructing a “choice by choice” path toward his ultimate goal, this selective movement is a work of physical construction that the various concepts of "reading" do not account for (Aarseth, 1997).

AOCHS reported that they used their personal computing devices, mobile smartphones, tablets, and calculating devices for academic learning as well as day to day activities associated with social interaction, business, and recreation. In response to the question, “How do you use information technology outside of their online classes for learning?” approximately 10% of the AOCHS questionnaire respondents stated that the meaning and intent of this question was unclear. This response suggests that there is no real distinction for these AOCHS between learning in an online higher education context and learning outside class. The devices, the processes, and even the Internet applications, sites, and services used by AOCHS are equivalent in either context. An exciting prospect of today’s computer mediated adult online educational environments is their potential to move beyond the traditional paradigm of “a teacher and students exchanging information” to allow the intentional consciousness and intelligence present in the global information infrastructure to inform the cognitive development of all of the participants by engaging both their physical biological and their digital virtual selves. (see Figure 8).

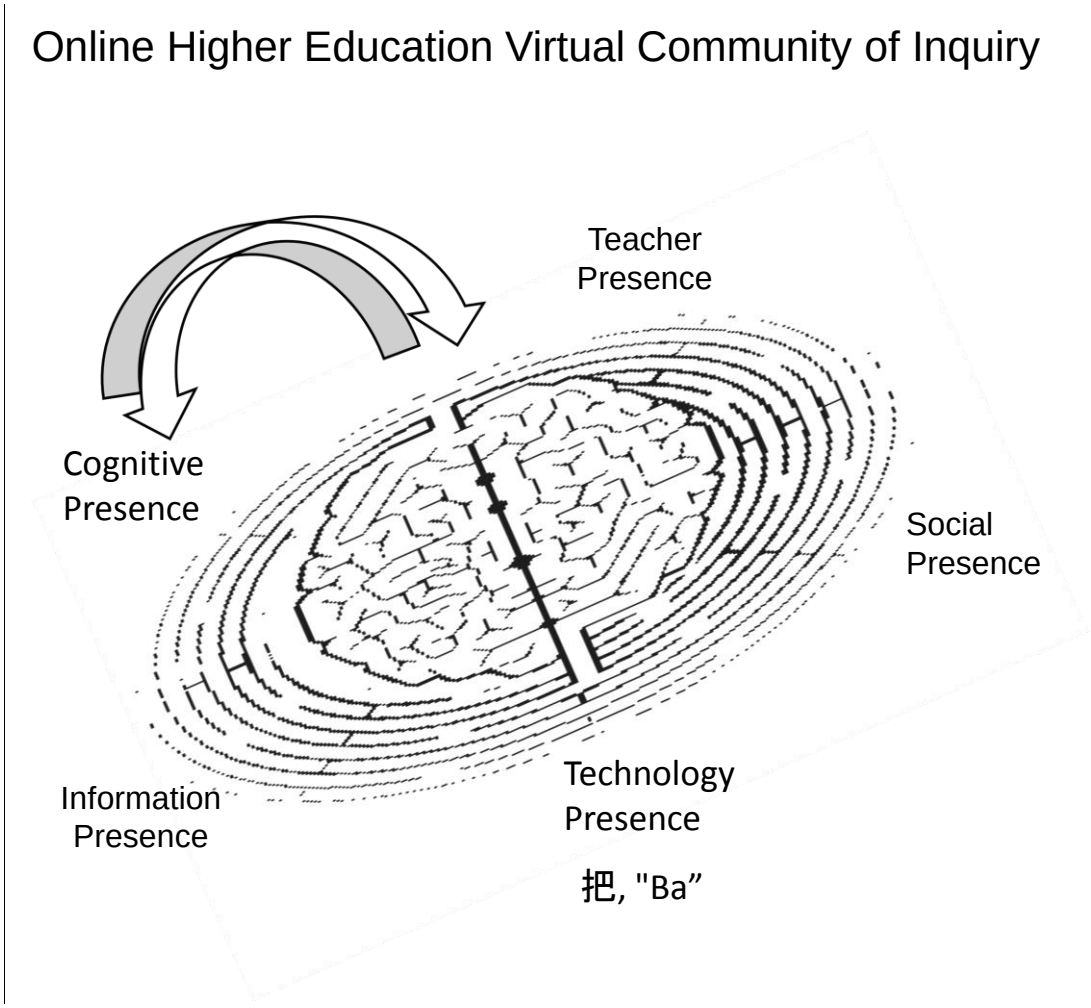

Figure 8. Online higher education virtual community of inquiry.

Technology Presence (Hybrid Thinking and Personalized Learning)

As digitally enhanced participants in andragogy, the teacher and students in an Adult online college class can connect and integrate the conceptual realities residing in not only their biological brains but also in their “cloud-based,” digital brain extensions (agents and data stores) (Kurzweil, 2014).

Because it eliminates barriers to student participation such as distance and scheduling, computer-mediated education technology has the capacity to disrupt the traditional business model of institutions of higher learning.

> Having the ability to do my work when it is convenient for me makes this experience so rewarding. I work full time so having the opportunity to take classes online does not interfere with my work schedule (AOCHS Questionnaire Responses, 2015, CSDb, n.p.).

Even though most higher education institutions now have some form of online course delivery and most students will take some form of online course, the traditional aspects of college education still predominate in many computer mediated classrooms. Even after the brick and mortar walls were eliminated from the online classroom, vestigial "virtual walls" remained solidly in place. Now, as social interaction, personal commerce and vocational activities all coexist on the same electronic devices and digital contexts as online higher education activity, the dichotomy of school world and real work is coalescing into a single digitally mediated life experience. Online learning can make truly personalized learning possible, and disruptive innovation is the economic process that may allow the online technology to fulfill its promise.

Higher education organizations' cost structures and pricing models are all subject to change as a major portion of adult college student enrollment shifts to online courses. According Christensen (2013),

> Higher education is just on the edge of the crevasse. Generally, universities are doing very well financially, so they don't feel from the data that their world is going to collapse. But I think even five years from now these enterprises are going to be in real trouble." [They are vulnerable to] the availability of online learning. It will take root in its simplest applications, then just get better and better. … Some will survive. Most will evolve hybrid models, in which universities license some courses from an online provider like Coursera but then provide more-specialized courses in person. (As quoted in Howe, 2013, n.p.).

Implications for Practice

Due to the varied backgrounds and demographic characteristics of the AOCHS participants selected for this study, it is not probable that the successful strategies and practices employed by any one participant will work for other study participants. However, often

descriptions of successful experience are potentially generalizable to some extent and are, therefore, worthy of critical examination. Implications for practice suggested by the results of this study are included below.

- Adult online college students who cultivate a self-image of successful academic achievement (regardless their previous personal history of academic performance) are likely to achieve academic success.
- Adult online college students who employ successful time management strategies are likely to achieve academic success.

Adult online college students who carefully preplan the assigned course activities (online postings and essay assignments) are likely to achieve academic success.

- Adult online college students who "pre-crastinate" (prepare assignments early to protect themselves from missing deadlines) are likely to achieve academic success.
- Adult online college students who establish direct channels of communication with online instructors are likely to achieve academic success.
- Adult online college students who learn and comply with institutional standards, such as APA version 6.0, are likely to achieve academic success.
- Adult online college students who engage in positive and supportive communication with online classmates are likely to achieve academic success.
- Adult online college students who comfortably employ learning technology to engage with Information are likely to achieve academic success.
- Online instructors can help adult online college students achieve academic success through active participation as fellow learners in online discussions.

- Online instructors can help adult online college student achieve academic success by sharing real world experiences with their students.
- Online instructors can help adult online college students achieve academic success through active communication of positive, encouraging assessment of their work efforts.
- As institutions of higher learning adopt online teaching technologies, the institutional standards of student learning can be maintained through enhanced course design and online faculty practices.
- Online institutions of higher learning should provide orientation training specifically designed to align adult online college students' expectations with the realities of distance learning in higher education contexts.
- Online institutions of higher learning can encourage adult online college student success by helping them to anticipate and manage the communication-based challenges they will encounter in online classes.
- Online institutions of higher learning should continually search for and adopt proven new technologies in social media and web commerce businesses, in order to keep navigation through their courses logical, consistent, and efficient.

Limitations of Results and Conclusions

Due to the interpretive and exploratory nature of this research project, these results and conclusions are presented with an explicit acknowledgement of their inherent limitations. This study was not intended to produce generalizable findings or prescriptive action plans for improving practice in institutions of online higher education. The findings, conclusions, and recommendations of this study are presented solely as the experiences of a number of

academically successful participants in adult online higher education, which have been documented, organized, and interpreted by the researcher in combination with his own experiences, and the diverse perspectives he has obtained in an extensive review of applicable scholarly literature. Readers should carefully consider the context in which these findings were developed when considering their applicability for use in other contexts. The goals of this study were to address the research problem in conformance with methodologically sound qualitative analytic processes to ensure internal validity, situational validity, and reliability.

Assessment of Internal and Situational Validity

The AOCHS participants in this study were randomly selected based on the single specific criterion of having been selected for an academic honors list for the previous academic quarter (Winter 2015). Therefore, the sample could have included a wide spectrum of adult undergraduate students of varying academic abilities, aptitudes, and histories. Participants ranging from below average students who achieved their first ever 3.0 quarterly grade point average to exceptional scholars with lifetime 4.0 grade point averages were potentially included. The experiences they relate, combined with recent research, indicate that there may be a set of important common factors supporting their success and/or opposing their educational efforts. If these common AOCHS experiences can be understood and applied to theory, then helpful formative actions might be applied in practice. Although the participants in this study were all academically successful, the descriptions of their experiences are strongly influenced by the emotional challenges, conflicting priorities, and disappointments that all adults face in everyday life. Frequently, the addition of academic endeavors to the already full schedules of adult learners presents an insurmountable challenge; however, for AOCHS participants in this study success has been possible. The lessons learned from their struggle are valuable components of the results of this study.

The differences documented by the researcher in the lived experiences of the participants support the internal validity of the study by describing the phenomena that comprise AOCHS experience from multiple, commonly held perspectives. By purposefully selecting four broadly representative phenotypical case studies aligned with identified adult online higher education market segments, the researcher sought to ensure internal validity through inclusion of diverse perspectives.

Other potential threats to the validity of this research are unforeseen motivations by the research subjects to misrepresent or withhold information from the researcher or researcher biases due to his own personal experience of the adult online college educational environment in the institution in which this study will be conducted. The internal validity of this study could have been threatened if the participants' reports of their experiences were inaccurate. Although this limitation exists, it was mitigated by the researcher's description of the potential value of the study results to the participants. The value of sharing techniques and strategies for academic success was probably a key motivation to AOCHS in soliciting their voluntary participation in the study. It is believed that their statements unbiasedly reflect their personal perspectives, memories, and feelings. Under the protection of anonymity, it was assumed by the researcher that the participants' responses would be honest and free of omissions. By utilizing the online survey capability of the Google Apps installation at the online institution of higher learning where this study was conducted, the researcher verified with near perfect certainty the identity of participants and the accuracy of recording their questionnaire responses in the case study database. The phenotypical in depth follow up interviews were transcribed personally by the author from WEBEX meeting audio recording files.

Based on the methodological framework employed, this study accurately reflects the conditions existing in the context in which it was conducted. The researcher was satisfied that the combination of highly structured questions, the accurate and unbiased automated recording of participant responses, and the shared agreement that the value of this study depends upon the accuracy and completeness of the data, all help ensure that the necessary conditions for achieving internal and situational validity and were met.

Assessment of Reliability

The reliability of this study is the extent to which its results are likely to be repeatable in a subsequent study by the same or different researchers in the same or different contexts. As is the case with all social research, changing environmental and interpersonal contexts present a valid concern for the reliability in this study. Because this is a descriptive and exploratory study, reproducibility is not the primary indicator of its value. However, its value does depend to some extent on an assumption of commonality in the lived experiences of AOCHS and that sharing their perspectives can support positive programs of activity to improve the effectiveness of online higher education practice. The random selection of a large sample of AOCHS for solicitation to participate in this study guarded against biases arising from a small sample size. In addition, the in depth follow up analysis of participant responses based on common AOCHS market segment phenotypes ensured coverage of diverse experiential models. While it is not certain that the results of this study would be reproduced in a different part of the world, or at a distant period in the future, it is anticipated that the results would be repeatable in similar online higher education contexts including similar student and faculty demographics and technology infrastructures. The inclusion of the case study database archive for this research will enable other researchers to understand and replicate the selection process, test instruments and interview

protocols, and methods of analysis used to produce these results. The case study database is intended to improve the reliability of this study by providing every possible archival detail and artifact to future researchers who might wish to repeat this study.

In this study, the complexity of defining a set of criteria for determining success in adult online college education support a combined exploratory and constructivist epistemological approach through a combination of questionnaire response analysis, interviews, and multiple-case study of AOCH students. Yin (1984), defined the case study research method as "an empirical inquiry that investigates a contemporary phenomenon in its real life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (p. 23). In this study, the researcher had no control over the attitudes or behavior of the students in the study population and the online education context is tightly interrelated with the students' successful experience, therefore the use of a case study methodology as one type of research method was selected.

Data source coding coverage and theme saturation

Coding of the AOCHS online questionnaire responses and interview transcripts in this study was accomplished by systematically applying conceptual thematic labels to the collected data. The goal was to develop a coding framework sufficiently flexible to accommodate all salient themes that emerged in the process of data collection. The source file data base report from the researcher's qualitative analysis toolset NVivo 10 for windows (see table 5) indicates that sufficient theme identification and coverage were achieved in this study to provide a basis for understanding and further research, without passing the point of theme saturation and becoming repetitive in most of the inquiry dimensions.

Table 5

Coding Density and Coverage from AOCHS Questionnaire Responses

Data Source File	Coded References	Coverage
AOCHS Questionnaire - Reasons for Success	197	75.3%
AOCHS Questionnaire -OL Teachers	185	79.7%
AOCHS Questionnaire -OL Classmates	146	80.8%
AOCHS Questionnaire -Best OL Learning Experience	127	79.7%
AOCHS Questionnaire -Most important OL technology	180	90.4%
AOCHS Questionnaire -Technology used for non-class learning	179	86.7%
AOCHS Questionnaire -Suggested Improvements to OL classes	214	82.1%

In the questionnaire response analysis described above, the researcher compared the frequencies with which participants referred to themes identified in each area of inquiry in the coding hierarchy as factors affecting their academic success (Appendix G). The findings reported from this analysis were used by the researcher to direct his qualitative analysis of the questionnaire data toward productive areas of inquiry.

Limitations of Qualitative Research

Qualitative research is grounded in the sociological tradition and rests on the interpretation of phenomena and experience. Its purpose is to discover underlying patterns and meanings. To be of high quality, the interpretations must be free of bias (trustworthy or credible), confirmable by others (dependable), and applicable to similar situations (transferable).

In this study, the researcher sought to generate meaningful knowledge through a systematic attempt to interpret self-reported experiences of successful performance by AOCHS.

The goal was to interpret the meaning and significance of participant experiences in a way that others in similar situations might learn and benefit from them. This type of study is also useful as a source of suggestions for future research, both qualitative and quantitative in nature.

Since research on human subjects is intensively managed through independent institutional review, informed consent to all institutionally mandated terms and conditions are required for participation. If an AOCHS customer experience questionnaire respondent answered "yes" to the question, "Would you agree to participate in a follow up telephone interview to discuss your responses in greater detail?" he or she was sent an email from the researcher offering to agree upon an interview date and time during the upcoming two weeks. In the process of scheduling, each potential interviewee was invited to access an online link to the standard official institutional informed consent form, which indemnified the institution from all responsibility for any physical or mental harm he or she might experience, whether foreseen, unforeseen or unforeseeable. If the potential interviewee failed to electronically sign indicating his or her agreement to the terms of the study then no interview was conducted. In the end, only four of the forty-one volunteer questionnaire respondents agreed to the terms of informed consent and participated in in-depth interviews. If a heterogeneous sample had not been obtained, the researcher would have sought institutional approval to contact a newly selected random sample of AOCHS during the subsequent academic quarter. Fortunately, each of these four subjects represented a distinct AOCHS phenotype, resulting in a heterogeneous experimental sample for the phenomenological case study analysis.

Even if these factors negatively affect the generalizability of the results of this study, it can still contribute value as a descriptive interpretation of phenomena from one researcher's unique qualitative point of view. Even if generalization is limited, a study can add to the body of

knowledge with nonrandomized, irreproducible observations, if those observations provide useful information about a phenomenon of interest (Flyvbjerg, 2012).

Importance of Results and Conclusions

General Importance of Results

By identifying the technical strategies and practices used by honor students to achieve deep and meaningful online learning, the researcher hopes to increase to the body of knowledge available to enhance effectiveness in evolving online education technology application and practice. Results from the study will contribute to the understanding of how successful learners use technology to process information in online classrooms. This understanding will help educators apply technology more effectively to enhance student learning and to prepare students for successful careers in the knowledge economy.

Importance to Adult Online College Students

With their ubiquitous access to personal digital assistants such as smartphones and laptops, adult learners have immediate access to nearly unlimited information about any topic. Having information is not, however, the same as having knowledge. Knowledge consists not only of accumulated information, but also of interpretation, assessment of relevance and critical judgment. Knowledge is information assessed against and made congruent with its relevant context. Knowledge of how and why some online college students achieve academic success can potentially be useful to any student seeking to achieve similar results.

Importance to Online Teachers and Online Class Facilitators

Results from the study will add to the current understanding of how successful learners use technology to process information in online classrooms. This understanding may provide

useful examples of student-perceived best teaching practices and technology applications for online undergraduate instructors.

Through a detailed exploration of the self-reported experience of adult online college honor students, the researcher has documented these students' perceptions, motivations, and practices. The importance of this study rests on the assumption that these perceptions, motivations, and practices support successful academic performance to a greater extent than any other external factors and environmental conditions. Therefore, by a thorough exploration of the lived experiences of a sample of the adult online college honor student population, some important and useful strategies for academic success in online higher education were identified. They included a mature self-image and work ethic, effective management of time, effective workload planning, clear and timely communication with faculty members, positive collaboration with classmates, and fluent use of learning technology.

Importance to Online Institutions of Higher Learning

Adult online college education enrollment continues to feel the negative effects of the strengthened global economy and new technology-supported instructional models such as blended learning and MOOCs. Since Adult online college education enrollment is closely, but inversely associated with general economic performance, it is expected that a trend of declining growth in enrollment will continue.

As online programs have matured, two trends have emerged that forecast increasing competition among online education service providers.

> First, students are enrolling in institutions further from home. Second, the range of program offerings is expanding. Professional fields such as business, information technology, nursing, and criminal justice have the largest online enrollments, but online degrees are now available in specializations such as interior design, game design, museum studies, sign language, real estate, substance abuse prevention, radiology,

> aeronautics, veterinary assistance, and bioinformatics. (U.S. Department of Education, 2014, p. 4)

As competition intensifies, the convenience of online study is less of a compelling motivation for adult students to enroll in online degree programs. "All the effects of a mainstream market, consumer pragmatism, a slower pace of innovation, tech-digestion, and the ripple effects of regulation and scrutiny, make online education less appealing for its own sake and more one option among many" (Fleming, 2014, p. 1). This study explores the lived experience of academically successful AOCHS, who represent the ideal consumers of adult online higher education.

Recommendations

Recommendations for practice and for research in this section are designed to be used collectively to support beneficial collaboration among education professionals and qualitative researchers seeking to increase the proportion of academically successful adult students in institutions of online higher education. The results of this study reflect the belief that collaboration among researchers and practitioners may synergize the evolving online higher education business sector. The researcher believes that many of the same technologies and business practices which have supported exponential growth and profitability in technology based businesses such as social media companies, news and information companies, search and marketing companies, and relationship inducing networking companies can be directly applied to adult online college classes. Application of the best technologies and practices of highly successful Internet businesses to online higher education might improve the overall academic success rate for students, and increase the efficiency and cost-effectiveness of online intuitions of higher learning, Most importantly, adopting customer based best practices in adult online higher

education may support the creation of less stressful, more compelling and more enjoyable learning experiences, encourage their academic success.

Recommendations for Practice

Assessment of student learning outcomes is traditionally based on retention rates and grade point averages, but now in the increasingly competitive adult online college education business sector, assessing learning outcomes has taken on greater significance and sophistication. As an increasing number of institutions of higher learning adopt online teaching technologies with the expectation of increasing enrollment while simultaneously reducing cost, the institutional standard of student learning outcomes must somehow still be maintained through enhanced course design and online faculty practices.

Many respondents to the AOCHS online questionnaire described negative feelings that they sometimes experience in the online college class environment (fear, frustration, isolation, and mistrust) as academically successful honor students, it may not be immediately apparent why these feelings occur. Some report anxiety and stress when struggling with an unanswered question, and unclear assignment, an unexpected low grade, or other negative feedback from an instructor or classmate. A NVivo word frequency query against the 93 AOCHS responses to the question, “What emotions do you often experience while participating in online classes?” yielded the following graphic word cloud where type face size is proportional to the number of occurrences of each emotional experience in the questionnaire response database file (see Figure 9 and Table K1).

Figure 9. Frequency of occurrence of emotion references.

Experiential learning is a tension- and conflict-filled process (Kolb, 1984). The fact that learning is a continuous process grounded in experience has important educational implications. One's responsibility, as an educator, is not only to implant new ideas, but also to dispose of or modify old ones. In many cases, resistance to new ideas stems from their conflict with existing beliefs that are inconsistent with them. Based on the experiential learning model (Kolb, 1984), all learning is relearning. "How easy and tempting it is in designing a course to think of the learner's mind as being as blank as the paper on which we scratch our outline, yet this is not the case. Everyone enters every learning situation with more or less articulate ideas about the topic at hand" (Kolb, 1984, p. 28).

There are two primary dimensions to the learning process (Kolb, 1984). The first dimension represents the concrete experiencing of events at one end and abstract

conceptualization at the other. The other dimension has active experimentation at one extreme and reflective observation at the other. Thus, in the process of learning, a student" moves in varying degrees from actor to observer, and from specific involvement to general analytic detachment" (p. 42). New knowledge, skills, or attitudes are achieved through dialectic tension among four modes of experiential learning. In order to be effective, learners need four different kinds of abilities:

- Concrete experience abilities - students must be able to involve themselves fully, openly, and without bias in new experiences.
- Reflective observation abilities –students must be able to reflect on and observe their experiences from many perspectives.
- Abstract conceptualization abilities –students must be able to create concepts that integrate their observations into logically sound theories.
- Active experimentation abilities –students must be able to use these theories to make decisions and solve problems.

Even at its best, this process path is difficult to traverse.

> How can one act and reflect at the same time? How can one be concrete and immediate and still be theoretical? Learning requires abilities that are polar opposites, and the learner, as a result, must continually choose which set of learning abilities he or she will bring to bear in any specific learning situation (Kolb, 1984, p. 30).

If the education process begins by "bringing out the learner's beliefs and theories, examining and testing them, and then integrating the new, more refined ideas into the person's belief systems" (p. 28), the learning process will be inherently stressful. This process is often resisted by learners when the new theories are incongruent with theories-in-use that are more integrated with the person's prevailing interaction with the world. As described by Argyris and Schon (1974) based on their inquiry into the effectiveness of professional education:

> …the trouble people have in learning new theories may stem not so much from the inherent difficulty of the new theories as from the existing theories people have that already determine practices. We call their operational theories of action theories-in-use to distinguish them from the espoused theories that are used to describe and justify behavior. We wondered whether the difficulty in learning new theories of action is related to a disposition to protect the old theory-in-use. (Argyris & Schon 1974, p viii)

Frustration, stress, and anxiety contribute to mistrust and fear. According to Deming (1986), no organization can work optimally without the trust and mutual respect of its members. Fear is manifested in many ways: fear of reprisal, fear of failure, fear of the unknown, fear of relinquishing control, and fear of change. Fear does not motivate people; instead, it constrains people and prevents the system from reaching its full potential. Recommendations for the management of the complex emotional admixture facing adult online college students include the following.

- Provide orientation training specifically designed to align adult online college students' expectations with the realities of distance learning in higher education contexts.
- Encourage adult online college students carefully to consider both the benefits of academic success and hardships they will encounter in online classes.
- Help adult online college students achieve academic success through active communication of positive, encouraging assessment of their work efforts.

The Quality Matters (QM) program offers quality assurance through a research-based rubric for online course design (Ralston-Berg & Nath, 2009). The QM rubric is focused mainly on operational aspects of online course delivery. Four of the items on the QM survey had highest perceived level of student perceived importance. These items are listed in order of importance. (Ralston-Berg, 2014).

- Clear instructions tell me how to get started and how to find various course components.
- Technologies required for the course are readily available – provided or easily downloadable.
- Criteria for how my work and participation will be evaluated are descriptive and specific.
- Navigation throughout the online components of the course is logical, consistent, and efficient.

The findings of this study are consistent with the student perceived most important quality indicators selected from the QM rubric. They support continual investment in faculty professional development emphasizing the online teacher's vital roles; actively encouraging student engagement in collaborative learning, joining as a fellow learner in their online class communities of inquiry, and providing sustained support and advocacy for online learning technology development.

The following innovative recommendations for practice are examples of the changes suggested by AOCHS responding to the online questionnaire:

- Eliminate participation grading based on some arbitrary number of posts per week or number of words per post.
- Allow posts to the class discussion boards by text or voice, or even live video.
- Provide participants a "text notification" immediately whenever somebody comments on their posts.
- Provide students opportunities to share their screens and show their research references online in real-time.

- Provide students in online classes the capability to digitally “raise their hands” to ask questions, and receive immediate answers.
- Recommend that online instructors to give students “likes” and “comments,” the same as on Facebook.
- Allow online college students to upload or read aloud, or even sing their essays.
- Provide video lectures, video watching assignments, and free Internet labs in online classes.

The most effective online college institutions will develop best practices of operation that employ evolving technology to offset decreasing online student enrollment rates with more cost effective instructional processes and reducing failure rates. This study also provides insights for improving institutional practice by decreasing variability in student academic performance resulting in higher quality educational experiences for adult online students. Institutions of online higher learning should acknowledge the inherent tension and anxiety produced by experiential learning and the cognitive development process it supports. The adult online college student experience entails, at its best, frustration culminating in satisfaction, loneliness culminating in congeniality and panic culminating in calm relief. By equipping adult online college students with effective planning tools and coping strategies, institutions of online higher learning can improve academic success rates and intervene proactively to reduce academic failure. This will support an engaging and compelling online college education experience for students and help them produce precisely qualified graduate candidates for the careers of the future.

The Future of Information Technology and Online Higher Education

When mentally projecting possible future states along the current exponential trajectory of Information Technology evolution in Adult Online Higher Education, the researcher

speculates that certain fundamental relationships may already be radically changing. Students have grown in technical expertise from experimenters and early adopters of network based devices and systems into fluent users. As they have incorporated these digital brain extensions into their conscious minds, they have acquired open channels to near infinite information and unprecedented analytical and computational power. Their digitally extended minds seamlessly interact with their online social communities and the institutions of commerce, government, medicine, and education upon whom they depend.

Information technology's exponential rate of evolution continues to bring unprecedented capabilities into existence where ever it is deployed, as totally new, exotic, and expensive devices are rapidly mass manufactured and become essential tools of daily life in modern society. Standardization of designs and interfaces takes place rapidly. Useful innovations are generalized to optimize their value to the total marketplace. This standardization in "state of the art" in information technology has resulted in the creation of a small number of extremely large and efficient organizations which serve billions of customers. Municipal organizations have become national institutions and national institutions have become global institutions as technology balances the elimination of time and distance barriers with the creation of near infinite economies of scale.

Though their widespread adoption of online technology to deliver higher education services to millions of college students across many geographically diverse populations, online academic institutions have entered into the market driven competition which inevitably drives consolidation and results in the creation of a small number of very large global survivors. In order to survive this academic industry consolidation, schools will outsource classes and

instructional services, undergo changes in administration policies, and seek accreditation for competency based curriculums and blended learning delivery paradigms.

Under the evolving influence of information technology in online higher education, the role of the instructor will be inevitably changed. Through the implementation of technical capabilities, a student will have access to a personalized educational experience, customized specifically for his or her needs. Rather than competing, as a member of a class, for the attention of the teacher, he or she will enjoy the personalized support and guidance of many virtual teachers, instantly evaluating the individual student's progress and prescribing the most effective activities to ensure maximum intellectual progress. As a consequence of this evolutionary change in online higher education, a large number of faculty members from intuitions of higher learning throughout the world will find it necessary to seek alternative employment, perhaps as course designers or in a different industry.

Recommendations for Future Research

- Attempt to replicate the results of this study using larger sample sizes, and in online higher education institutions located in other geographical regions.
- Investigate academically unsuccessful adult online college students, the opposite extreme-case scenario.
- Examine the model of phenotypical market segmentation used in this study to determine if other demographic, career, experience, or aspirational factors are significantly correlated with academic success.
- Examine emerging and proposed adult online college education institution activities intended to improve adult online college success rates.

- Study academically successful adult online college honor student time management behaviors in detail to learn how they can be developed.
- Assess the relative importance of personal work ethic, self-image, and technology expertise in supporting AOCHS academic success.
- Assess the relationship of AOCHS academic success with future employment, career advancement and compensations levels.
- Compare the positions of employment obtained by AOCHS in the first year following graduation with those of the total adult online college new graduate population.
- Explore newly emerging adult online college education paradigms.

Other Research Questions for Consideration

What emerging trends in adult online higher education will affect student success rates in the near future?

How do less academically successful adult online students perceive AOCHS, and what behaviors do these perceptions elicit?

How will future changes in enrolled student population demographics (age, ethnicity, employment experience, etc.) affect adult online college student success factors?

How is the massive college student loan debt burden affecting adult online college student graduation rates and potential employment opportunities?

Significance of the Study

By identifying the technical strategies and practices used by honor students to achieve deep and meaningful online learning, the researcher hoped to contribute to the body of knowledge available to enhance effectiveness in evolving online education technology application and practice. Results from the study may add to our understanding of how successful

learners use technology to process information in online classrooms. This understanding could help educators apply technology more effectively to enhance student learning and to prepare students for successful careers in the knowledge economy. With their ubiquitous access to personal digital assistants such as smartphones, tablets, and laptops, adult learners have immediate access to virtually unlimited information about any topic. Having information is not, however, the same as having knowledge. New applications of technology can potentially assist digitally augmented students and teachers in converting information into knowledge more efficiently.

Concluding Comments

Today, vast numbers of adult students are choosing to enroll in online college classes as a whole generation of middle-class society members find that a college degree is a necessary credential for obtaining a rewarding career as a knowledge worker in today's information-based society. Online teaching and learning now comprise a significant portion of higher education in the United States. Adult online college education presents unique opportunities to exploit new technical capabilities to enable deep and meaningful learning, and to enhance the learning experience and success of online students. Through an in-depth exploration of the experiences of a sample of AOCHS, the researcher hoped to contribute to the current understanding of online education and how to improve it.

In the late 20th century, Drucker predicted that the widespread use of computer technology would force a fundamental shift in education because the computer is a learning technology rather than a teaching technology.

> The computer has unlimited patience. No matter how many mistakes the user makes, the computer will be ready for another try. It is at the command of the

> learner in a way no teacher can be… And, unlike the printed book, it admits of infinite variation. The computer is playful. (Drucker, 1989, p. 240)

The purpose of this study was to explore the experiences of adult online college honor students in order to identify important factors supporting honor students' use of technology in the online learning environment. The potential benefits from this exploration are the discovery of opportunities to exploit new technical learning capabilities and to enable deep and meaningful online learning for more of the students participating in adult online college environments. The findings of this study contribute to the body of knowledge available for use in optimizing the effectiveness of adult online college education in preparing students for successful careers in today's information technology-based economy.

This study was a work of academic research conducted to augment the body of knowledge associated with AOCHS customer experience. This study was intended to provide all interested groups participating in adult online higher education useful insights into the common, identifiable factors that support and facilitate academic success in adult online college classes. It is the hope of the researcher that not only students, but also their employers and family members will find this information useful. In addition it hoped that members of the online higher education business sector or non-profit institutions, faculty members, course designers, and administrators will derive some value from these findings.

The researcher's experiences while completing this project were a valuable stage in an unanticipated journey that commenced when he returned from a series of expatriate corporate executive assignments in London, UK and Turin, Italy. Taking up an information technology operations executive post at a large US-based automotive company, the researcher planned to spend the final ten years of his formal career managing an orderly and predictable technology infrastructure environment. This plan was not consistent with the reality of the dire economic

conditions throughout the world just two years later, when the U.S. automotive industry was catastrophically forced into reorganization under direct federal government executive supervision.

These unique circumstances offered the researcher an opportunity pursue a totally new course in life. Accepting a company-wide early retirement offer, the researcher set forth on a personal quest to pursue two of his lifelong aspirations, first, to become a classically trained and professionally certified chef, and second, to earn a doctoral degree, qualifying himself to share his knowledge and life experiences with others as a professional educator in an institution of higher education.

The culinary phase of his journey of discovery lead to the completion of undergraduate studies at a U.S. culinary institute, and to internships at a family ristorante in Umbria, Italy and at a Google regional headquarters corporate cafeteria in Ann Arbor, Michigan. As an adult student in online college classes, the researcher was exposed to many surprises and unforeseen challenges. It was very clear that the high rates of attrition among adult online college enrollees were associated with some tragic misconceptions regarding the adult online college experience resulting from misleading marketing messages by large, profit-seeking education management corporations. Having gained his aspirational culinary credentials, the researcher embarked on the second, more ambitious path, pursuing a doctoral degree in business administration.

Combining his career experience in business management and information technology, he pursued a scholarly investigation of adult online higher education as a technology-mediated, socially complex, Internet business model. Over the five years of his journey of educational development, the researcher has dedicated his investigative efforts toward understanding how and why some adult online college students succeed. He has also studied, along the way, the

methodologies used to conduct scholarly research. And now, he has begun planning ways in which to share his findings and conclusions with persons who might benefit from knowing them.

Upon reflection, this project has occupied a challenging but immensely rewarding period in the researcher's life, abundantly rich in new knowledge while at the same time socially barren and desultory, often mentally arduous and effortful while at the same time blissfully free of the vexations of daily commuting, and, hopefully, culminating in the beginning of a new career as a professional educator. Best of all, this unanticipated journey of self-development has reawakened the researcher's voracious lifelong appetite for the wonders of exploration and the magic of discovery.

> "The best thing for being sad," replied Merlin, beginning to puff and blow, "is to learn something. That's the only thing that never fails. You may grow old and trembling in your anatomies, you may lie awake at night listening to the disorder of your veins, you may miss your only love, you may see the world about you devastated by evil lunatics, or know your honor trampled in the sewers of baser minds. There is only one thing for it then — to learn. Learn why the world wags and what wags it. That is the only thing which the mind can never exhaust, never alienate, never be tortured by, never fear or distrust, and never dream of regretting. Learn is the only thing for you. Look what a lot of things there are to learn" (T. H. White, *The Once and Future King*, *p. 185).*

"Live as if you were to die tomorrow. Learn as if you were to live forever."

Mahatma Gandhi

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APPENDIX A

TRAINING IN THE PROTECTION OF HUMAN SUBJECTS

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI)

HUMAN RESEARCH CURRICULUM COMPLETION REPORT

Printed on 07/11/2014

LEARNER	Harold Brakhage (ID: 4248259)
DEPARTMENT	Graduate Studies
EMAIL	hbrakh01@baker.edu
INSTITUTION	Baker College
EXPIRATION DATE	07/10/2016

SOCIAL/BEHAVIORAL INVESTIGATORS

COURSE/STAGE:	Refresher Course/2
PASSED ON:	07/11/2014
REFERENCE ID:	13449341

REQUIRED MODULES	DATE COMPLETED
SBE Refresher 1 – Defining Research with Human Subjects	07/10/14
SBE Refresher 1 – Privacy and Confidentiality	07/10/14
SBE Refresher 1 – Assessing Risk	07/10/14
SBE Refresher 1 – Research with Children	07/10/14
SBE Refresher 1 – International Research	07/11/14
Biomed Refresher 1 - Instructions	07/10/14
SBE Refresher 1 – History and Ethical Principles	07/11/14
SBE Refresher 1 – Federal Regulations for Protecting Research Subjects	07/11/14
SBE Refresher 1 – Informed Consent	07/11/14
SBE Refresher 1 – Research with Prisoners	07/11/14
SBE Refresher 1 – Research in Educational Settings	07/11/14
SBE Refresher 1 – Instructions	07/11/14

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI Program participating institution or be a paid Independent Learner. Falsified information and unauthorized use of the CITI Progam course site is unethical, and may be considered research misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Program Course Coordinator

APPENDIX B

CAMPUS PRESIDENT APPROVAL DOCUMENT

Baker College Institutional Research Request

Requestor's name: Harold H. Brakhage Date: March 4, 2015

Email address: harold.brakhage@baker.edu Campus: Online

Phone number: (248) 446 3125 **Position: DBA candidate**

Provide a brief summary of the proposed research in lay terms. Include major hypotheses, research questions, and research design.

A phenomenological multiple case study approach will be used by the researcher in this study of adult online college honor student (AOCHS) experience. Interview transcriptions will be comprehensively analyzed using phenomenological methodology to construct a rich description of the experience of AOCHS success based on multiple case studies. Multiple case study research is the most appropriate approach because the purpose of this study is to explore ways in which the adult online college education environment affects the perspectives, motivations, and practices of honor students while they are experiencing online learning technology's effects.

The research questions proposed in this study are:

Research Question 1: How do adult online college honor students experience deep and meaningful learning in online classes?

Research Question 2: How do adult online college honor students achieve critical engagement in their classes?

Research Question 3: How do adult online college honor students use information technology in their online classes for learning?

Research Question 4: How do adult online college honor students use information technology outside of their online classes for learning?

Research Question 5: What improvements in adult online college class technology would adult online college honor students suggest?

Describe the information needed and how you plan to obtain the data needed.

Drawing upon his own experience as an adult online college honor student, the researcher will construct an a priori framework of dimensions of inquiry for use in an online questionnaire that will be provided to adult online college honor students at Baker College. The students will be asked to describe their lived experiences with success in online college education and the meaning they assign to these experiences. Based on qualitative analysis of their responses, a purposefully selected sample of students will be chosen for in-depth follow-up telephone interviews. The goal of the purposeful selection process will be to obtain the most heterogeneous mix of subjects possible based on demographics, life experiences, and self-reported perceptions of the online college class environment, their class related motivations, and the practices that support their academic success.

If the research involves human subjects, please answer the questions below:

Describe the source(s) of subjects and the selection criteria. Specifically, how will you obtain potential subjects, and how will you contact them? Will any compensation or incentives be given for participation? If so, what?

An invitation to participate in the study will be sent to online undergraduate students over 24 years of age at Baker College who are both listed in the December 2014 (Fall Quarter) academic honors list, and who had been enrolled and participated in the Noel-Levitz Survey of Online Student Priorities and Satisfaction in February 2014. They will be invited to respond to a Google forms-based online questionnaire that will consist of 8 open-ended questions regarding the underlying perspectives, motivations, and practices that have resulted in the respondents' success as adult online college Honor students. Access control for the questionnaire and data summarization will be done using built-in Google forms capabilities, to limit subjects to one response only, but allow editing of their own response if desired. Since the honors list consists of several hundred positively motivated and academically successful adult students, it is anticipated that more than 10 % of the invitees might agree to complete the survey. (see Figure 1).

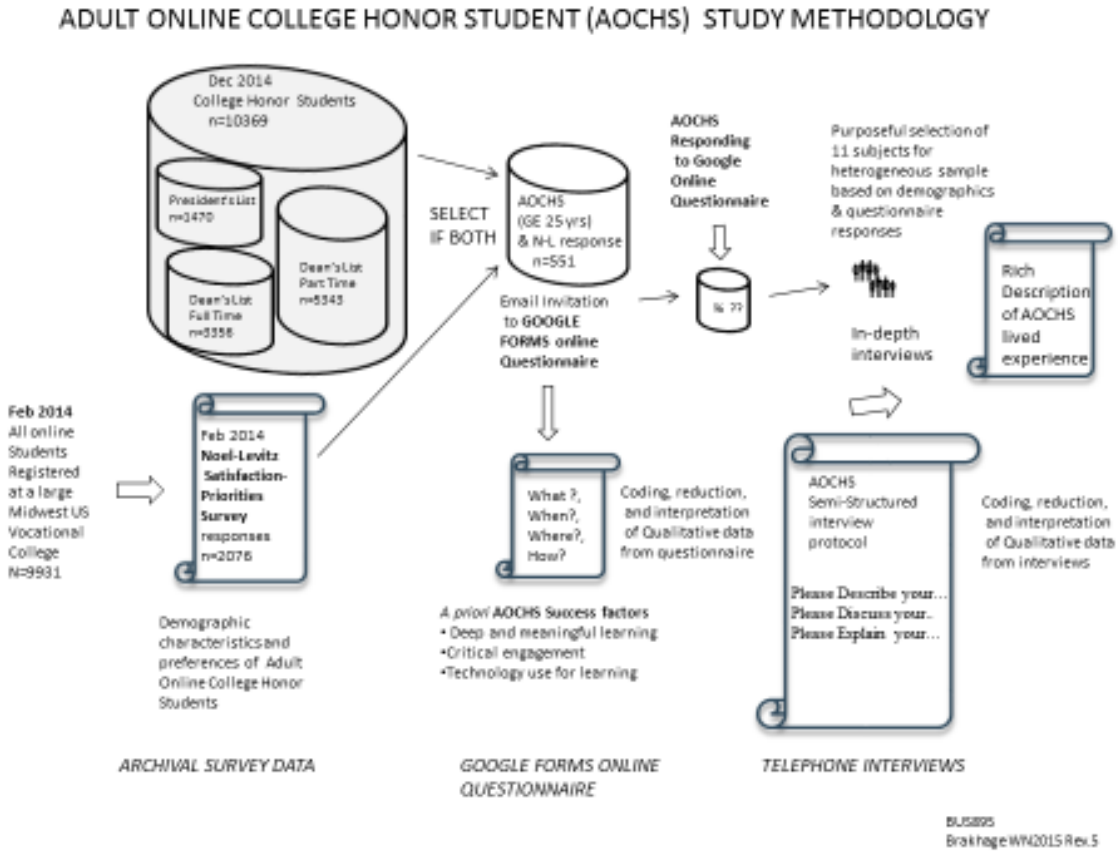

Figure 1. adult online college Honor Student study methodology.

Using demographic characteristics from the Noel-Levitz survey and responses the Google forms online questionnaire, a small purposeful sample of AOCH students will be selected for voluntary participation in semi-structured in-depth telephone interviews regarding their lived experience as successful adult online college honor students. No compensation is offered to any participant in this study.

Describe the consent process. Attach a copy of all consent documents.

The online questionnaire form will begin with a statement of informed consent as a requirement before continuing to answer the questions

Provide a step-by-step description of each procedure, including the frequency, duration, and location of each procedure.

1. The Baker college study participants will receive an email from the researcher inviting them to respond to a Google forms-based questionnaire consisting of eight open-ended questions regarding the underlying perspectives, motivations, and practices that have resulted in their success as adult online college honor students.

2. Selection of participants for in-depth follow-up telephone interviews will be based on their responses to this online questionnaire and archival data from the Noel-Levitz Survey of Online Student Priorities and Satisfaction in February 2014. The selection process will purposefully select the most heterogeneous possible group of interviewees in order to ensure the most comprehensive study findings possible.
3. The Assessment of adult online college honor student Perspectives, Motivations, and Practices is a structured interview protocol prepared by the researcher to gather rich and detailed qualitative data related to the experience of adult online college honor students. The questions are intended to elicit descriptions of the students' perspectives, motivations, and practices that can be applied toward the development of a rich description of the adult online college honor students' experience. Each participant will be identified with a unique identification number and a pseudonym. Each interview will be recorded using appropriate technology and transcribed for thorough analysis. For all interview-based evidence, traceability will include a clear connection from the interview recordings to transcripts and the case study interview protocol.

Describe all known and anticipated risks to the subjects including side effects, risks of placebo, risks of normal treatment delay, etc.

There are no medical treatments or procedures in this study. Subjects are not expected to experience any discomfort or risks during this study. The subjects will be asked to answer questions, and possibly, to explain some of their answers, in order to help the investigator fully understand their experiences related to their academic success in online classes.

Describe the anticipated benefits to subjects, and the importance of the knowledge that may reasonably be expected to result.

Individual subjects will not receive any benefits from participating in this study. Adult online college education presents unique opportunities to exploit new technical capabilities to enable deep and meaningful learning and to enhance the learning experience and success of online students. Through in-depth exploration of the experiences of a sample of adult online college honor students, the researcher will seek to identify opportunities to facilitate adult online college student learning. The researcher hopes to contribute to our current understanding of online education and how to improve it.

How will confidentiality of the data be maintained? Include exact location of the signed originals of the informed consent forms, the method of storage, and the names or titles of individuals having access to the consent documents. Specify a date for the destruction of data.

The researcher will establish and maintain a repository of all documents, consent forms, tabular materials, and narratives related to the study as a case database (CSDb). All written documents and recorded data will be stored in a locked filing cabinet at in the researcher's residence, 9677 Peer Road, South Lyon, MI 48178. Only the principle researcher Harold H. Brakhage and members of his dissertation committee will have access to these files and data. In addition, one backup copy of the study data will also be made by copying all computer files and scanning hardcopy documents electronically. This backup database will be secured with a strong encryption algorithm and stored as a directory in the researcher's private online drive in Baker College's online file directory. The encryption key for the online backup will be kept on removable disk storage at the researcher's residence with no network connectivity. All of the records in the CSDb will be retained for three years and then deleted or destroyed. The planned deletion date is December 31, 2018.

Describe the help you expect to need with the analysis of this data.

The researcher plans to analyze the data himself using appropriate software tools with support from the DBA dissertation committee.

How will results be disseminated?

The DBA dissertation will be published in accordance with Baker College Online Center for Graduate Studies policy.

What is your timeline?

The study will be completed during the 2015 academic year.

Signature of requestor _____

Signature of immediate supervisor ___John Vinton_____

Signature of faculty sponsor
(if requestor is a student) _____

Signature of campus president _____

Official use only by Campus President and/or System Executive Committee

Additional approvals and notifications to: (check all that apply)

___ Appropriate System Director ___ Human Resources (HR) ___ Institutional Research Board (IRB)
___ Information Technology (IT) ___ Other: _____

Final Summary required, due: _____

APPENDIX C

IRB APPROVAL LETTER

Baker College
Since 1911

Center for Graduate Studies
Baker College Online
1116 West Bristol Road
Flint, MI 48507-5508
Telephone (810) 766-4390
(800) 469-3165
Fax (810) 766-4399

Protocol ID # 15-6
Please refer to this Protocol ID number in all communications about this project with the IRB.

TO: Harold Brakhage

FROM: Institutional Review Board

DATE: April 2, 2015

RE: Customer experience in online higher education: A study of adult online college honor students.

Thank you for your submission of the above named protocol. The project has been identified as exempt under guidelines provided by rule of Health and Human Services. Please note that it is the researcher's responsibility to ensure that data is collected and maintained in a manner that meets the established criteria. No changes in procedure or documentation should be made without consultation with the IRB. Changes to procedures may require the project to be resubmitted under a different category.

This project has been approved in its current form for one year from 4-2-2015. If the project extends beyond this date, a request for modification must be submitted no later than 30 days prior to the above date. Please remember that any changes to the protocol will require the submission of a revised protocol to the IRB. Any adverse reaction by a research subject is to be reported immediately to the Chair of the IRB at 810-766-4329 or via e-mail at irb@baker.edu.

Questions concerning the IRB decision or any concerns may be directed to the IRB Chair, through Dr. Michael Tyler, Associate Vice President of Institutional Effectiveness.

APPENDIX D

AOCHS INVITATION EMAIL

Dear Baker College Honor Student,

Congratulations on making the Baker College Winter 2015 honors list. You have a right to be very proud of your academic accomplishments! Your past support for Baker College' student surveys and Academic Improvement Programs have also been very much appreciated.

My name is Harold Brakhage. I am a fellow student at Baker College, enrolled in the DBA program of the Baker College Center for Graduate Studies. My dissertation research project is to learn more about the customer experiences of adult online college honor students. I hope that by collecting the input of a large sample of honor students such as yourself, I can identify common success factors and useful strategies that could make taking online college classes easier and more enjoyable.

I am inviting you to answer an online questionnaire (eight short questions) because your knowledge and experience are very valuable to my research. I would be very grateful if you agree to participate, and in return, I will be happy to provide you with the full report of my study results when they are completed.

I have posted the online questionnaire in the Baker College Google Docs: https://docs.google.com/a/baker.edu/forms/d/1HnuJ_QVxDcG1TnmZSKmKhfkvN-DJxkxDIiRXe-4DQPs/viewform?usp=send_form

(In order to analyze and consolidate all of the responses, I will need to remove this link in seven days, so please check out the link as soon as you can.)

Thanks in advance for helping to support online college student success!

Harold Brakhage, MBA
Doctoral Candidate
Center for Graduate Studies
Baker College, Flint Michigan
1-248-535-4544
harold.brakhage@baker.edu

Harold Brakhage
Consistency and Commitment

Harold Brakhage
Liking

Harold Brakhage
Authority

Harold Brakhage
Social Proof

Harold Brakhage
Reciprocity

Harold Brakhage
Scarcity

APPENDIX E

ADULT ONLINE COLLEGE HONOR STUDENT QUESTIONNAIRE

Table E1

Online Questionnaire Template

Google forms AOCHS Questionnaire

Thank you for participating in this study of the learning technology in your online classes and how you have responded to it to achieve success.

Participation in this study is voluntary and no compensation is provided. You may choose to stop participating at any time with no adverse consequences.

Please indicate your voluntary agreement to participate in this study by selecting the following box,

☐ I accept these conditions and agree to participate in this study.

How far along are you in your program of study at Baker College? ☐ Early ☐ Around mid-way ☐ Near Graduation
What is your age group? ☐ Younger than 25 years of age ☐ 25 years of age or older
How much of your program of study is online? ☐ No online classes ☐ Only a few online classes ☐ A significant percentage of online classes ☐ All online
1. Based on your experience, what are some reasons for your success in online classes?

2. Please describe one of the best learning experiences you have had in an online class.
3. Please describe your experiences with your online teachers.
4. Please describe your experiences with your fellow online class members.
5. What emotions do you often experience while participating in online classes?
6. What technologies in online classes do you find most important to your learning experience?
7. What information technologies do you use of for learning outside of online classes?
8. Based on your experience in adult online college classes, what improvements can you suggest?

☐ yes ☐ no Would you agree to participate in a follow up telephone interview to discuss your responses in greater detail?

☐ yes ☐ no Would you like to receive a report of the results of this study when they are available later this year?

Please enter your preferred email address

Are there any other comments that you would like to add?

APPENDIX F

AOCHS QUESTIONNAIRE CODING SCHEMA

Table F1

Adult Online College Honor Student Study

Questionnaire coding schema (*a priori*)

Research Question	Area of Inquiry (for coding)	Dimension Code
Research Question 1: How do adult online college honor students experience deep and meaningful learning in online classes?	Self-described AOCHS learning experience	A1
Research Question 2: How do adult online college honor students achieve critical engagement in their classes?	Self-described AOCHS meaning making process	A2
Research Question 3: How do adult online college honor students use information technology in their online classes for learning?	In class technology related AOCHS success factors	A3
Question 4: How do adult online college honor students use information technology outside of their online classes for learning?	Out of class technology related AOCHS experience	A4
Research Question 5: What improvements in adult online college classes would AOCHS suggest?	Effectiveness of online learning environment	A5
Emergent Dimensions from outside research question areas (if needed)	Other identified AOCHS success factors	A6

APPENDIX G

AOCHS QUESTIONNAIRE DETAILED THEME CODING DENSITY

Table G1

Theme Coding for Area of Inquiry A1, Deep and meaningful learning

Area of Inquiry(AI)	Coded theme	Coded subtheme	AI Coding Density percent	AI Coding Density mean	Theme Coding Density percent	References
A1 Deep and meaningful learning			23%	74.5		298
	Practices				49.7%	148
		time management				86
		study habits				39
		Self-teaching				20
		Self-starting				3
	Ergodic dialog				25.8%	77
		Foraging				40
		Wondering while Wandering				33
	Attitudes				20.1%	60
		Perceived value				20
		Perceived authenticity				12
		dedication to goal				10
		Self-motivation				7
		maturity				3
		feeling of being respected				3
		perseverance				2
		work ethic				2
	Cognitive presence				4.4%	13
		willingness to think differently				4
		healthy cynicism				2
					100%	

Table G2

Theme Coding for Area of Inquiry A2, Critical engagement

Area of Inquiry (AI)	Coded theme	Coded subtheme	AI Coding Density percent	AI Coding Density mean	Theme Coding Density percent	References
A2 Critical engagement			36%	116.8		467
	Teachers				62.3%	291
		helpfulness if asked				40
		Presence				38
		support for students				29
		responsiveness				27
		commitment to student success				19
		Clarity of tasks and schedule				18
		expectations of students				16
		practices of instruction				15
		grading equity				15
		Instructor feedback.				14
		understanding of student's lives				12
		qualifications				12
		competence				9
		friendliness				9
		passion for subject				7
		rule enforcement				6
		responses to requests for help				4
	Classmates				32.8%	153
		quality issues of their work				69
		equity of contribution to team projects				35
		Forming lasting relationships				27
		Code of ethics				13
		collaboration among classmates				5
	Employer				1.7%	8
		demands				8
		support				0
	Family				3.2%	15
		demands				11
		support				3
					100%	

Table G3

Theme Coding for Area of Inquiry A3, Learning Technology in OL Classes

Area of Inquiry (AI)	Coded theme	Coded subtheme	AI Coding Density percent	AI Coding Density mean	Theme Coding Density percent	References
A3 Learning Technology in OL Classes			18%	76.0		228
	Software				70.6%	161
		Blackboard LMS				48
		OL library				27
		Search (Google, Bing, etc.)				24
		instructional videos				20
		educational websites				17
		MS Office				16
		learning labs				7
		wiki feature				1
	Information presence				21.9%	50
	Online and campus support				7.5%	17
		Academic advisor				7
		Administration Executive Policy				5
		library and database resources				2
		IT tech support				1
		tutoring				1
		Internships and employment support				1
					100%	

Table G4

Theme Coding for Area of Inquiry A4, Learning Technology outside of class

Area of Inquiry (AI)	Coded theme	Coded subtheme	AI Coding Density percent	AI Coding Density mean	Theme Coding Density percent	References
A4 Learning Technology in Real Life			10%	31.3		125
	Hardware				33.6%	42
		personal computer				29
		mobile device				9
		tablet				3
		calculator				1
	Network				31.2%	39
		Internet connection				39
	Apps, sites, and services				28.0%	35
		email				4
		YouTube				4
		industry newsletters				4
		news websites				4
		audio books				4
		cloud backup				2
		podcasts				2
		Wikipedia				2
		Social media				2
		blogs				1
		OL magazines				1
		R analytical				1
		OL retail SW and entertainment				1
		OL dictionaries				1
		webinars				1
		video conferences SKYPE, WEBEX				1
	do not understand used to learn outside of OL classwork				7.2%	9
					100%	

Table G5

Theme Coding for Area of Inquiry A5, Suggested Improvements in OL Classes

Area of Inquiry (AI)	Coded theme	Coded subtheme	AI Coding Density percent	AI Coding Density mean	Theme Coding Density percent	References
A5 Suggested Improvements in OL Classes			13%	32.6		163
	Practices in Discussion Boards				49.1%	80
		arbitrary posting requirements, 5 of 7 days				30
		non-participative instructor				24
		participative instructor				14
		need more questions and topics available				3
		references mandatory - no original thoughts allowed				2
	exemplary classes				25.8%	42
	timeliness of assessments and grading				10.4%	17
		late or unreliable				12
		timely				4
	textbooks				8.6%	14
		e-book				8
		paper				2
	teacher engaged as fellow learner				6.1%	10
					100%	

APPENDIX H

MARKET SEGMENT/ PHENOTYPE QUESTIONNAIRE RESPONSES

Table H1

Market Segment/ Phenotype Questionnaire Response Summaries

Market Segment/Phenotype	Ann	Bill	Cris	Dez
How far along are you in your program of study at Baker College?	Around mid-way	Near Graduation	Early	Near Graduation
What is your age group?	40 years of age or older	25 to 39 years of age	25 to 39 years of age	40 years of age or older
How much of your program of study is online?	All online	All online	Only a few online classes	A significant percentage of online classes
1. Based on your experience, what are some reasons for your success in online classes?	The non-judgmental collaboration among classmates and not having to worry about have the assignment done before I leave the house in the morning to go to work the day it is due. Since each day ends at 11:59 I have until that time to get it done and turned it. I don't stress out too much over that unlike a traditional class that meets at a specific time each week. Being able to contact the professors by email or phone anytime also helps. I have spoken with two on the phone for guidance, which I would not have gotten if I had to wait after class to speak with them.	Time management, balancing work, school, and family time to ensure that everything gets done.	I was hesitant to take an online class, so when I did I made sure the topic was one I was familiar with.	I am an individual who works hard to succeed in my education. I want to do well in every course so I make sure I put forth the effort to achieve that end result. I realize online courses are quick, but they are more work and you must go online every day and submit assignments and discussion board data promptly. Although I only need to sign on five out of seven days, I usually log in everyday and participate. This practice keeps me up to speed with the classroom conversations and keeps me in the loop. I also print out course information and keep it in a

Market Segment/Phenotype	Ann	Bill	Cris	Dez
				folder as if I were in a classroom setting. It is imperative to remain organized at all times.
2. Please describe your experience with your online teachers?	Most of the teachers are great. They are very helpful and are willing to help you if you just ask. I have had some teachers who are less favored in their teaching style. They follow Baker's rules to a 'T' in the strictest way, which makes everything harder on the students. I have also found that for teachers who teach classes for majors that double as a requirement for another major need to relax and figure out a happy medium to grading that student who is not in the major. For example, in a psychology class the teacher expects for you to have a reference for everything you post	Most of my instructors have been great. I have had a couple along the way (not at Baker) that didn't seem to care and just issued passing grades to everyone.	Like all instructors some are better than others. Personally I found it very helpful Instructors would direct us to short demonstration videos in addition to the book.	I have had different experiences while participating online. The majority of my instructors were adequate. I enjoy the experience more with those who actively participate in the forum consistently. The instructor I have this semester is the first that has been so visible in our discussion forums. There is no lapse or difficulty trying to keep the conversation going because my instructor is there and steering us the whole way. I have learned so much even though it's a lot of work, it feels great to come away with some real learning outcomes. Other experiences were sufficient when the instructor was hit

Market Segment/Phenotype	Ann	Bill	Cris	Dez
	or type for homework. She does not believe that a person can have an original thought.			or miss because there were always classroom leaders who kept the conversation going so that we could all continue to communicate to earn our points. I also enjoy when the instructor is an expert in their field as we gain so much knowledge and examples from them in conjunction with the book.
3. Please describe your experience with your fellow online class members.	Class mates are great. They all follow the simple rules such as do not react to another's post in an unprofessional manner. They all follow the code they are given in the introductory seminar.	I have only come across two students that were difficult to work with. The majority seems to care about their education and add great experience and substance to the course which it essential in an online environment	For me there was almost no connection with other students. In an on ground class it is very easy for me to develop relationships.	I have had great experiences with my classmates in general. We are all there to learn and complete our course with a positive outcome so it runs smoothly. On occasion, I have encountered a student who was a little aggressive with their response, but each time the instructor interjected and handled the situation to ensure it did not go to a place it shouldn't.

Market Segment/Phenotype	Ann	Bill	Cris	Dez
4. What emotions do you often experience while participating in online classes?	Most of the time, I am laid back when doing the homework, excited when I see I have feedback to a post whether it is from the teacher or another classmate.	It depends on the course. If it is a course I enjoy I am very passionate about it and invest much more time, but if not, I only put forth the effort to pass and maintain my high GPA.	Frustration when I cannot understand something. You cannot receive an answer immediately like in an on ground class.	The first week is very stressful because week one sets the bar and lets you know what changes you need to make if your grades are not where you want them to be. Because I expect a lot from myself, I am usually stressed, but motivated to ensure all assignments are submitted on time based on assignment instructions. I always strive for an A so I put in the work to achieve just that. I anticipate receiving my grades each week to verify that my efforts are on track.
5. Please describe one of the best learning experiences you have had in an online class.	It was in my sales class. This is a requirement to graduate. While trying to start on my final project for the class, I thought I had been reading too much into the project. I left the teacher an email and he actually called me. It turned out I was making it harder than what it had to be, but I had his guidance whenever I needed it on the paper and on the discussion board. It was a great class!	The best online experiences I have had are all working with online labs. Since I am an IT student using virtual labs to see how things work and figuring out why is my favorite way to learn. Writing papers on a weekly basis get boring and adding in labs keeps things different and fresh.	My personal finance class gave me tons of practical information I will be able to use for the rest of my life.	All of my experiences have been positive and I have enjoyed the online class environment totally. It works for my schedule and I enjoy being in the comfort of my home and able to go online at any time to participate in class. … I like the fast pace of six weeks of learning and then on to the next course. …

Market Segment/Phenotype	Ann	Bill	Cris	Dez
6. What technologies in online classes do you find most important to your learning experience?	The discussion board, the use of the app so I can see what percentage I am achieving when I cannot be around a laptop or desktop computer. I also find the power points to be helpful.	virtual labs such as Microsoft labs and the Linux remote access to Baker	Not many. I did not find online tutoring helpful at all. For me, discussion boards do not give the as rich of an experience as a classroom discussion.	My online tools are of course my laptop, Internet, Baker e-library, Blackboard, etc. I utilize lots of resource material to ensure I am APA compliant. I do access the Baker College library to check out actual books. Whatever I need Baker is there to assist me and that is comforting. …
7. What information technologies do you use of for learning outside of online classes?	I use the Internet to do research on assignments and the textbook. I have also used cd's that contain software for a specific class and scanners if I have to get a paper assignment turned in.	Internet	Not many. Microsoft and web browsing.	… I like to take notes by typing them to remain organized throughout the course. Whatever I need for class such as calculators, resource books, etc.

Market Segment/Phenotype	Ann	Bill	Cris	Dez
8. Based on your experience in online college classes, what improvements can you suggest?	There needs to be a separation of classes that are major specific and that are requirements .This way a teacher can adjust how they grade students if the class is for a major or not. I would allow students to see the next seminar a day ahead of time so they can make use of their available time to the best of their ability. I would change the date the grades after to be in to Sunday instead of Monday which allows students to refine their skills to what the teacher expects from them since it is not always clear… I would hold all teachers accountable to what they tell their students, it needs to be addressed. I would also match the teacher up with students in *(time zones*). Having a teacher teach a class when they live in California and the students are on the East coast doesn't work. There is too much of a time difference for them to get answers quickly.	The only area that I believe needs to be improved upon is the *(out)* dated text and course material for some courses. For example, discussing the hardening of a Windows XP or Server 2003 system is not really a task needed *(today)* and the course should be updated to current in use systems.	If I were able to Skype with tutors that would have helped me.	I would like to see all of the curriculum available online. Baker College still has some classes that you must take on campus and it's not always necessary. Those who choose this option must be focused students and should be able to complete their program in this manner without on campus classes mandated. I would like to request that instructors utilize our books throughout the course because they are so costly. Sometimes you barely open the book and it may have cost $300.00 for one book.

APPENDIX I

INFORMED CONSENT FORM

Project Working Title: Customer Experience in Online Higher Education – A study of adult online college honor students

Investigator: Harold H. Brakhage, Center for Graduate Studies

You are being asked to participate in a research project conducted through Baker College. The College requires that you give your signed agreement to participate in this project.

The investigator will explain to you in detail the purpose of the project, the procedures to be used, the expected duration or frequency of your participation, and the potential benefits and possible risks of participation. You may ask him any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have.

If you decide to participate in the project, please sign on the last page of this form in the presence of the person who explained the project to you. You will be given a copy of this form to keep.

Refusal to participate in this study will have no effect on any future services you may be entitled to from the College. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

1. **Nature and Purpose of the Project:** The purpose of this study was to explore the experiences of adult online college honor students, in order to identify important factors supporting honor students' use of technology in the online learning environment. The researcher hopes to satisfy his curiosity regarding whether there are common, identifiable factors that support and facilitate the academic success of adult online college honor students.

2. **Explanation of Procedures:** You will be asked to answer questions, and possibly, to

explain some of your answers, to help the investigator fully understand all your experiences related to your academic success in online classes. The investigator will contact you after your first discussion, either to ask a few more questions about your answers, or to make sure that his final report of your discussion is a true and accurate account of your statements and feelings, or both.

3. **Identification of Any Experimental Medical Treatments or Procedures:** There are no treatments of procedures in this study.

4. **Discomfort and Risks:** You are not expected to experience any discomfort or risks during this study.

5. **Benefits:** You should not expect to receive any benefits from participating in this study.

6. **Confidentiality:** Your participation in this study will be kept confidential. Your name, names of others, organization names, and all other identifying information will be removed from your conversations with the investigator before those conversations are discussed or reported in this study.

7. **Explanation of compensation, if any:** None.

8. **Name of person to contact in case of research-related injury:** There is no expected risk of injury related to this research. You can contact the individual in #9 below if you later feel you have been placed at risk or have been injured as a result of this research.

9. **Name of person to contact in case of questions about your rights as a research participant:** If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects' Institutional Review Board through Mike Tyler, Associate Vice President of Institutional Effectiveness, at 810-766-4329.

Participant: I have read this form and I understand it. I understand that if at any time I become uncomfortable with this project I am free to stop my participation. I understand also that it is not possible to identify all potential risks in an experimental procedure, and I believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

_____ _____

Signature *Date*

APPENDIX J

AOCHS IN-DEPTH INTERVIEW TEMPLATE

Table J1

AOCH Student Interview Protocol

Sample Interview Schedule/Protocol Based on Research Questions

“Congratulations on your success in being an Honor Student for the prior quarter at your Online College. You can be very proud of this achievement. In addition, I would like to thank you for your participation in this interview in which we will discuss the online learning environment that you experience in your online classes and how you have responded to it to achieve success.”

Participation in this study is voluntary and no compensation is provided. You may choose to stop participating at any time with no adverse consequences. You may also request to have any data personally identifiable to you removed from the study if you choose to end you participation.

In order to protect the privacy of the participants in the interview process, transcripts of interviews will be identified by pseudonyms and only the researcher and his faculty advisor will have access to a list of participants’ names and corresponding pseudonyms. In accordance with the institution’s IRB policy, a repository of the case study data, a collection of notes, documents, tabular materials, and narratives related to the interviews will be preserved for a minimum of 3 years. One backup copy of the study data will also be made by copying all computer files and scanning hardcopy documents electronically. This backup database will be secured with a strong encryption algorithm and stored as a directory in the researcher’s private online drive in his college’s online file directory. The encryption key for the online backup will be kept on disk storage in a separate physical location with no network connectivity.

Interview Questions

(Questions related to Research Question 1: How do adult online college honor students experience deep and meaningful learning in online classes?)

1a. What, do you think, is the main reason for your success in your online classes?

1b. What additional reason(s) can you give for your success?

1c. Describe one of the best learning experiences you have had in an online class.

(Questions related to Research Question 2: How do adult online college honor students achieve critical engagement in their classes?)

2a. How successful, would you say, have you been in your academic performance throughout your life?

2c. What part do your online teachers play in your academic success?

2d. What part do your online classmates play in your academic success?

2e. What emotions do you often experience while participating in online classes?

2f. What challenges do you face related to your pursuit of an online degree?

2g. Describe your experiences while working on projects in collaboration with fellow online students.

(Questions related to Research Question 3: How do adult online college honor students use information technology in their online classes for learning?)

3a. What technologies inside the online classroom do you find most important to your learning experience?

3b. What is the physical environment where you do online class work? (Is it usually a certain location or room? Is it usually a specific time of day? Also please describe the furniture, lighting, background noise, music, TV, etc.?)

3c. What type of computer equipment do you use for your online classes?

3d. Describe your experience with the online discussion board part of online classes.

3e. Describe your experiences in completing essay assignments in online classes.

3f. During an online class working session, what % of the time do you spend straying off the task, following “interesting” links before getting back to work…

3g. What resources do you use most often to get information (references) for your discussion boards or essays (for example, Baker Library online, Google searches (or Google scholar?), Wikipedia, etc.)?

3h. Describe your experiences with reading the assigned pages in the textbooks in online classes.

(Questions related to Question 4: How do adult online college honor students use information technology outside of their online classes for learning?)

4a. What information technologies do you make use of for learning outside of online classes.

4b. How do you use these technologies in your learning experience?

(Questions related to Research Question 5: What improvements in adult online college classes would AOCHS suggest?)

5a. Based on your experience in adult online college classes, what opportunities can you suggest for improving the technology.

5b. If you use your imagination, how would you describe the best possible online technologies in the future?

APPENDIX K

AOCHS SELF-REPORTED EMOTIONAL EXPERIENCE

Table K1

Word Frequency Distribution -

What Emotions Do You Frequently Experience in Online Classes?

Emotional word	Count	Weighted Percentage (%)
frustration	31	8.56
like	15	4.14
stress	15	4.14
anxiety	13	3.59
emotions	12	3.31
accomplishment	6	1.66
emotion	6	1.66
feeling	6	1.66
good	6	1.66
stressed	6	1.66
busy	5	1.38
difficult	5	1.38
stressful	5	1.38
think	5	1.38
understand	5	1.38
usually	5	1.38
want	5	1.38
able	4	1.10
anxious	4	1.10
content	4	1.10
enjoy	4	1.10
even	4	1.10
excited	4	1.10
expectations	4	1.10
experienced	4	1.10
first	4	1.10
happy	4	1.10
overwhelmed	4	1.10
anger	3	0.83
confusion	3	0.83
great	3	0.83
joy	3	0.83
late	3	0.83

love	3	0.83
positive	3	0.83
relaxed	3	0.83
sure	3	0.83
achieve	2	0.55
annoying	2	0.55
boredom	2	0.55
certain	2	0.55
enjoyment	2	0.55
excitement	2	0.55
fun	2	0.55
happiness	2	0.55
motivated	2	0.55
needed	2	0.55
nervousness	2	0.55
never	2	0.55
pride	2	0.55
strive	2	0.55
understanding	2	0.55

APPENDIX L

CASE STUDY DATABASE CONTENTS

Category	Archived Data Description
Archival Data	Electronic records including journal entries
	Digital publications by and public or private research organizations
	Research papers, including certain references cited in this dissertation
	Participant recruitment correspondence
	Digital case interview recordings and recording transcripts
	Personal journal notes
	Dissertation writer's production spreadsheet
	NVivo 10 Qualitative research database archival file

Summary of AOCHS Customer Experience Digital Archive (Case Study Database)

	Responders (pseudonym)	pages	words
Questionnaire data (.xls, .pdf)	93	89	31, 049
Interview data (.arf, .wav, .docx)	Ann	4	1398
	Bill	4	1407
	Cris	5	1898
	Dez	3	982
	H. Brakhage [bracketing]	6	2700
Total database		111	39,434

CURRICULUM VITAE

Harold H. Brakhage

9677 Peer Road
South Lyon, Michigan 48178

Mobile: 248 535 4544
email: brakhage@gmail.com

SUMMARY OF QUALIFICATIONS

- Professional educator with proven ability to teach and coach people. Experienced developer of highly effective teams.
- Experienced senior executive and IT architect in several Major Global Corporations. Particularly effective at encouraging international teamwork and implementing creative strategies that solve business problems and enhance customer service excellence while reducing costs.
- Recent culinary school graduate pursuing a lifelong passion for wholesome, natural, sustainable food and culinary excellence.

STATEMENT OF TEACHING PHILOSOPHY

As an educator, my personal mission also is to help students fulfill their highest individual potentials by providing a learning environment that is both challenging and, at the same time, safe, and helpful. My aspiration as an educator is to instill a love of learning in every one of my students. I also believe that it is important that positive and effective learning experiences are available to all members of the world's diverse society. Supporting my students in every reasonable and ethical way to succeed in my classes is a very important part of my obligation to them.

I believe that each student is a unique and important person who deserves a caring, and stimulating atmosphere in which to grow and develop. I believe that students will have greater respect for their teachers, peers, and the information presented when they are confidently sure of what is expected of them. When students are given authority to contribute to development of their course of study, they become more motivated. Developing a curriculum around student interests fosters intrinsic motivation and stimulates the passion to learn.

Teaching also provides me with a valuable opportunity to pursue my own passion for learning, intellectual growth, and beneficial social interaction. In order to be an effective teacher, I am dedicated to a lifelong quest for continuous improvement. I was very fortunate to have outstanding teachers and mentors in my life, and I will always strive to repay their investments in me by passing along their wisdom and philosophies to the next generation.

EDUCATION/TRAINING

DBA, Online Higher Education Technology 2015

Baker College Center for Graduate Studies, Flint, MI

BAS, Culinary Management 2012

International Cullinary School at The Art Institute of Michigan

MBA, Business and Industrial Management 1981

Univ. of Houston Clear Lake City, TX

Digital Telecommunications Engineering Officer, DMG 1974

U.S. Army Signal School, Ft Monmouth, NJ

BA, Educational Psychology, magna cum laude 1973

Louisiana Univ. Monroe, LA

CAREER HISTORY

Doctoral Candidate and Adjunct Instructor, Business Administration Sept 2012- present
Center for Graduate Studies Baker College, Flint Michigan

Fulltime Culinary Student 2010 - 2012
INTERNATIONAL CULINARY SCHOOL at the Art Institute of Michigan, and
ISTITUTO DI ARTE CULINARIA, Orvieto, Italy.
Attended the culinary internship program at the Istituto di Arte Culinaria, in Orvieto, Italy, while completing a Bachelor of Applied Science degree in Culinary Management. (Completed the 4-year degree in 27 months, GPA 4.0). AAS Culinary Arts, CC certification by American Culinary Federation.

Director, GM European Information Technology Infrastructure 1998-2009
GENERAL *MOTORS (GM),* Detroit, Michigan, Maidenhead, England and Turin, Italy
Directed Computing and Telecommunications of GM Europe. Managed IT services for GM's Opel, Vauxhall, SAAB, and Joint Venture companies with Fiat and Daewoo. Led the IT support for the formation of the new GM Engine and Transmission Engineering Design Headquarters in Turin, Italy in 2006.

Vice President, IT Operations, Internet Commerce Group 1997-1998
CHECKFREE HOLDINGS INC., Atlanta, Georgia. Implemented data processing systems for Check free electronic payment processing and Internet banking services for 2.4 million customers with nine of the top ten US Financial institutions.

Director of IT Operations 1995-1997
BELL ATLANTIC CORPORATION, Silver Spring, Maryland. Conceived and implemented a technology plan to relocate Bell Atlantic telephone bill processing for over 10 million residential customers from Philadelphia, PA to Freehold, NJ with less than 8 hours of transition time.

Director, Corporate Computing 1993-1995
NISSAN NORTH AMERICA, Englewood, Colorado. Reduced Nissan North America's annual data processing costs by more than $3 million through the consolidation of mainframe data processing centers from Toronto, Detroit, Dallas, Los Angeles, and Nashville to a single center in Colorado. Relocated Nissan's Global Network Hub from Tokyo to Colorado and consolidated its North American Backbone Network achieving $1.7 million in annual cost reduction.

Global Project Manager 1978-1993
TEXAS INSTRUMENTS INCORPORATED, Dallas and Houston, Texas. Managed the consolidation of Texas Instruments (TI) data processing centers in the United Kingdom, Italy, France, Germany, Portugal, Japan, Malaysia, Singapore, Taiwan, and the Philippines into one Mega Data Center in Lewisville, Texas, reducing TI's annual cost of data processing by $21.6 million

C**ommander, Co C, 16th Signal Bn, III Corps** 1973-1978
CAPTAIN, U.S. ARMY, SIGNAL CORPS, Fort Hood, Texas, Digital Telecommunications Engineering Officer, Distinguished Military Graduate, head of class, at U.S. Army Signal School, Ft Monmouth, NJ. Selected for early command assignment while still at the rank of First Lieutenant.

AWARDS

National Defense Service Medal	1973
TI Information Systems Customer Solution of the Year Award	1991
GM CIO award for Global Manufacturing Time Synchronization	2002
GM Chairman's Honors Award for leadership in European Engineering HQ startup	2005
Alpha Beta Kappa, National Honor Society	2011